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DIAGNOSIS OF PREGNANCY.[1]

By J. KYNASTON COUCH, M.D., M.R.C.S., L.R.C.P.,
Consulting Gynæcologist, Perth Hospital; Physician, King Edward Memorial Hospital for Women, Perth.

I PURPOSE this evening giving a paper on the diagnosis of the two pregnancies, intrauterine and extrauterine, laying stress on some of the pitfalls into which we may fall.

I have in my possession a copy of Ramsbotham's book on midwifery, which was a student's text book in the middle of the last century. There is no reference to diagnosis or even a chapter on this subject in the whole book. There is no doubt that the diagnosis of pregnancy has advanced very much since early Victorian days, when one of the ladies-in-waiting to Her Majesty had an ovarian tumour. This was diagnosed as pregnancy, which caused her withdrawal from the court. Eventually she died an old maid, but for the false charge she never forgave the Queen or the well known doctor who made the mistake.

All of you will be surprised to hear that the fœtal heart was supposed to have been recognized in the seventeenth century and then forgotten until it was recognized again in 1822 by Kergaradec, who also first noted the uterine souffle. Other confirmatory signs have since been recognized. This was really the result of confining women on their left side, and the doctors only using their hands; now they use their hands, eyes and ears. No woman was exposed during her delivery in the Victorian days.

I am not going to give a text book list of the signs and symptoms of pregnancy, but I am going

[1] Read at a meeting of the Western Australian Branch of the British Medical Association in August, 1930.

to dwell on certain points on which I have relied for many years in deciding if a pregnancy is present.

In cases of amenorrhœa I have always laid down that a woman is pregnant unless it can be proved otherwise, especially in women who are in good health and whose menstruation has ceased suddenly. When a number of immigrants arrived here some years ago I saw many whose periods stopped as the result of the change of climate, and I have frequently seen the same thing in probationers when they commence their arduous training for the nursing profession.

I agree with Giles in not taking the social, physical or mental condition of the patient into consideration. She may be plain or attractive, a street walker or a Sunday school teacher. They are women and are liable to fall like Mother Eve. I have often thought that the prayer against the world, the flesh and the devil was in the wrong order. The flesh should have been mentioned first.

Even with the young wealthy married people, two children are usually the number of their progeny, the universal adoption of contraceptive practices being the rule. This is a good source of income to the gynæcologist, but the reverse to an accoucheur. Hence the sudden cessation of their periods is not a cause of rejoicing, but of alarm. I can see at least two specialties being added to the present long list of such, namely, pregnantologist, because the woman wants to know her condition if she is a day late, and the contraceptologist to give advice how she is safely to prevent accidents in the future. I should not be surprised if a third will not be recognized—the abortionist. I even see now abortions being procured for early tuberculosis, slight goîtres, "nerves," blood conditions *et cetera*.

In the present day, or, as it is called, the post-war period, amongst the younger generation the companionately married are unfortunately becoming extremely common. One is constantly consulted by a number of these young ladies when they are the victims either of over-confidence or of the failure of contraceptives. In fact, the garage has replaced the cradle and the "Baby Austin" has replaced the human baby.

I have in the course of a long professional life made mistakes and seen some made by others.

A lady consulted me who had been married a week. She had been examined by two doctors two months after her periods had ceased, who both assured her she was not pregnant. I saw her two months later and found her four months pregnant. She was very indignant with these two men as she had only married to be on the safe side.

On the same day I examined a lady aged forty-one, a widow of eighteen months who had had ten living children. She had missed six weeks; she denied running risks. I examined her by artificial light and could not get Jacquemin's sign. I told her she had an enlarged uterus with a swelling on its left side, possibly a fibroid. I examined her four days afterwards by daylight, told her she was five weeks pregnant. She smiled and admitted taking risks.

In a case of a lady, aged fifty-two, who told me she was five months pregnant, I told her she had a fibroid. We both compromised when I delivered her of a mole, the relics of a labour she had had when fifty.

Text books refer to three classes of signs and symptoms. I may remind you only of the certain signs—the fœtal heart, fœtal parts, fœtal movements and the funic souffle.

A patient consults one for diagnosis in the earlier months and she demands a definite answer, but it is only by a combination of possible and probable symptoms and signs that one can do this.

I have met with one patient who in five successive pregnancies booked me for a certain definite day, and she was only in error once by two hours. Whether it was the result of a special orgasm or a swelling of her thyreoid, she knew at once she was bound to have conceived from that special intercourse.

Another lady had three sons, one every two years, whose birthdays fell on the same day. I could never ascertain how this was arranged.

My first rule is that there must be amenorrhœa in at least 95% of cases.

One finds occasionally women who tell you they are not sure of themselves, as they have the feeling that they are pregnant. On inquiry you will elicit that their periods have been regular up to two months previously, but since then the period has lasted only one or two days. Now this is quite possible, because the decidua do not fully join until the fifth month. I have seen a number of cases of premature menopause, say, before thirty, and you will find the menstruation has gradually ceased. This you will confirm by noticing the wasting of the *mons veneris*, the greater labia and the very small uterus.

I watched a very fine, well developed girl about twenty-four, who was a free lance. She used to menstruate twice a year and I never expected her to conceive. She consulted me on several occasions as she was sure she was pregnant, but only once did she get so far as to pass a small mole the size of a two months' pregnancy.

Of course, we have all seen women who conceive from child to child without any menstruation. When menstruation returns in a few months while nursing and the menstruation ceases, you will find in the majority of cases it is due to pregnancy. The menstruation having ceased, on examination you will find the uterus the size you would expect for the time elapsed. Should you find it larger than it ought to be, think of twins or a hydatid mole; also, if it is not the expected size, think of a carneous mole.

The diagnosis of a pregnant uterus from a fibroid is not so easy as one would expect, especially when the uterus containing a fibroid is uniformly enlarged and the patient tells you she feels movements. I have seen four women whose fibroids simulated a five months' pregnancy and who assured me they had quickened. In each of these I was positive there was no pregnancy because of the absence of Jacquemin's sign, and because there was no amenorrhœa. Only once have I fallen a victim in removing a pregnancy and a fibroid without knowing the pregnancy was present. I have removed an incarcerated uterus containing a fibroid and a pregnancy, but could not beforehand say which was the pregnancy and which was the fibroid. I knew they were both there.

The woman's symptoms in the first trimester vary. In many cases there are none, in others morning

sickness only, in others constant vomiting. The old prophets referred to the yearning symptoms of pregnancy, and there are many women who crave for certain foods as soon as they conceive, for example, pineapples, kippers, hard biscuits *et cetera*.

I fell unconsciously into a mistake when a lady who had passed her youth and who, I thought, was in for an early menopause, began to vomit continuously in spite of my treatment. She denied running risks. I kept her in bed for a week and when I pressed her appendix it was so painful I immediately sent her to hospital and removed it. I saw her three months afterwards, remarked how well she looked and found her five months pregnant. I then asked her why she did not confess to the risks when challenged. She replied she had depended on quinine capsules.

Please bear in mind that no other tumour in the pelvis, especially in the first three months, grows quicker than a pregnant uterus. On reexamination in a couple of weeks this point is evident.

One of the most reliable and confirmatory signs of pregnancy, and one upon which I largely depend, is Jacquemin's sign, so called after its discoverer in 1836. It is the term applied to the blue staining of the vulva, usually most marked around the meatus, in the vestibule, extending up the anterior vaginal wall, and is likened to the lees of wine, that is a pale bluish tint with a tendency to violet. It usually commences a month after the beginning of pregnancy, and becomes more marked as pregnancy advances. It disappears when abortion takes place or the ovum becomes blighted. I think it is pathognomonic of pregnancy, as I have never seen it in any other condition. I confess that when I am in doubt about Jacquemin, I again examine by daylight. I have found a violet discoloration of the cervix most marked at the os and gradually fading upwards, when I have used a speculum at the end of the first month. This, I think, is one of the earliest signs of pregnancy. I have not seen it mentioned in text books. It is possible to make a mistake in regard to it only if a vimule cap has been used, but in these circumstances the line of violet is quite sharp.

The softening of the cervix is a sign that requires much practice to elicit. Goodel first laid down the axiom that a cervix that feels as hard as the cartilage of the nose belongs to a non-pregnant woman, while if it is as soft as one's lips it is very suggestive of pregnancy. The apparent shortening is practically valueless in these days of bimanual examination. This term was used when only vaginal touch was practised.

In examining a patient always examine with the patient in the dorsal or lateral position and stick to either. I always examine with the patient in the dorsal position with the back supported by pillows and the pelvis raised if possible. Never examine unless the bladder is empty. When in doubt reexamine in a few days. You will be surprised what you will find on the second examination which you missed on the first. Hegar's sign which owes its value to the softening of the isthmus, is a useful sign. This also is due to the fact that the ovum does not yet occupy the entire uterus. The contrast between the firm cervix, the soft fundus and the still softer isthmus gives rise to the impression that there is an infantile uterus with an ovarian tumour. I have known this mistake made by a good, enthusiastic, young doctor who dilated the cervix of a pregnant woman and introduced a stem pessary for her to become pregnant, and an abortion followed. Hegar's sign is very useful, but difficult to ascertain if the patient is fat. The "hinge" sign, when one can move the fundus backwards and forwards on the cervix quite like a hinge, is also useful. Marked anteflexion is also a help. One sign which I thought I had discovered in my early days in this specialty was the broadening of the uterus as a first sign of pregnancy, but in this I found a man named Prior had been prior to me in this discovery.

A point one frequently notices is that if the ovum should develop near one or other tube, that side of the uterus will bulge at first more than the other. The same, if it lodges on the anterior or posterior walls, it will cause a bulging on its respective side. One ought to bear this point in mind, as it may be mistaken for a small fibroid or an extrauterine pregnancy.

Diagnosis of pregnancy from the consistency of the uterine walls I frequently make. If the consistency is elastic and springy, especially if you find a soft spot in the middle of the anterior wall, the pregnancy is generally there. Now the intermittent contractions of the pregnant uterus or Braxton Hicks's sign, as it is called, one may notice after the first few weeks, and this often results in the diagnosis of fibroid when an examination is made during a contraction. This sign is also useful in diagnosing an intrauterine from an extrauterine pregnancy or an ovarian when the uterus is enlarged over the size of a four months' gestation. One will harden and there are no changes in either of the others. The last of the earlier signs of pregnancy to which I wish to refer is the sinking in of the lower part of the abdomen about the third month, hence the old rhyme:

> In a belly that's flat
> There's a child, be sure of that.

Look across the lower part of the abdomen to elicit this sign.

I will repeat: Amenorrhœa confirmed by an enlargement of the uterus to the size according to its duration, Jacquemin's sign when the patient is examined by daylight, softening and violet tint of cervix, marked anteflexion, Hegar's sign, softening of the fundus, especially in front—these are the principal signs of the first three months. Breast signs after the second month in a *primipara* are helpful, but are of little value in a *multipara*. You can squeeze a little fluid after the first month. I lay great stress on the standing out and fullness, but the enlargement of the superficial veins is a very valuable sign.

I was examining a young lady of twenty once and noticing the striæ on one of her breasts and not on the other, I asked her if she had been pregnant. She told me it was the result of suckling her baby brother when she was about fifteen.

In regard to quickening, I have had several patients with fibroid tumours who have assured me they had quickened.

I remember one woman especially who had a uterus up to her umbilicus. She told me even when she was being lifted on to the table that she felt them. I knew otherwise, as there were no confirmatory signs. Even when the abdomen was opened, both of my assistants said: "Take care. What are you doing?"

The explanation, I think, is that intestinal movements are mistaken for the movements of the fœtus. You may recall the case of an early queen who said she felt life, which turned out to be the beginning of the ascites which killed her, and she was very indignant with her attendant when he told her the truth.

I have seldom heard the fœtal heart before the sixth month, and from the fifth to the seventh I much prefer listening for the fœtal movements. After the third month you will find that the vagina in a *primipara* admits the fingers much more easily for an examination; the walls are softer because they are beginning to prepare for the great stretching which they undergo during labour.

External *ballottement* is quite easy now and if one cannot recognize this, try internal *ballottement*, which when first successfully elicited is one of the most surprising signs in medicine. About the sixth month multiple pregnancies are diagnosed better than at term. It is much easier to recognize two heads and two trunks then, either abdominally or bimanually, because they are movable.

The confirmatory signs of pregnancy are all thoroughly established at the fifth month, because at this time all the breast signs, also the Jacquemin's sign and the cervical softening, are there. The facies of pregnancy is now developing. I have not seen a case of *facies ovarina* for many years. I have seen ten patients with phantom tumours, one as early as the eighteenth year, the majority from thirty-five to fifty. Percussion, if the patient is stout, is uncertain, but on keeping the hand upon the abdomen the tension of the walls does not vary.

I should like to relate some details of the lady of fifty-two who was positive she was pregnant.

Her uterus was the size of a five months' pregnancy. I told her she had a tumour, as it was impossible for her to conceive at fifty-two. She replied she was still menstruating and that she had had a child at fifty. Hæmorrhage began a few days later, for which I had to plug the vagina, and took the patient to a hospital. I then explored the uterus and found a very large cavity, but on one side there was a large fluctuating mass which I did not perforate, but left alone. The tumour rapidly grew in ten days to two inches above her umbilicus, and I had visions of some extremely malignant growth, when it suddenly ruptured, and two or three pints of old and new clot, but no fœtus, came away. It was evidently a mole from the last confinement two years previously.

This brings to my mind the celebrated case of Dr. Playfair, when a mole twelve months after the departure of his niece's husband was the cause of a big divorce case. In my case the mole was two years old.

The diagnosis of a mole from a live pregnancy in the first four months is really very difficult. There may be frequent hæmorrhages from a live pregnancy and in moles none. I think the presence of Jacquemin's sign settles the diagnosis.

A patient had a miscarriage at the fourth month, when everything came away. The patient made a perfect recovery. She came to me six weeks afterwards with a rapidly growing tumour in the uterus which in my ignorance I thought might be a chorionic cancer. Before I removed the uterus I determined to explore the uterus and I found a bunch of ribs in my forceps. I had unwittingly emptied the uterus of a second twin. This was twenty years ago.

This woman had Jacquemin's sign, but I thought then that it was due to the recent pregnancy, but I know better now, because the sign rapidly disappears as soon as the ovum comes away. I still repeat Jacquemin's sign in daylight is one of the best signs of pregnancy.

I have seen many cases of pregnancy in which there was practically an unruptured hymen, and in nearly all these patients one finds a retroverted uterus in which the cervix lies behind the hymen. The spermatozoa have only a short way to travel in these circumstances. This explains why the young ladies are so surprised when they find themselves pregnant because the sexual act has not been completed.

Extrauterine Pregnancy.

I am sure there is a number of early ectopic pregnancies that are undiscovered and never reach the operating table. The patients get perfectly well, but some are eventually operated on and we find a mass of adhesions of tubes and ovaries, the result of the organized blood clots. From the history of clean living and absence of curetting and douching the cause of these ectopic pregnancies is difficult to explain. I am sure that sepsis from catheter, curettes and douching, especially post-coital, causing some amount of salpingitis, is the main reason why the ovum cannot come through. The loss of endothelium which is replaced by scar tissue, prevents the ovum being driven down the tube. I have thought that the new blow pipe method of Politzerizing the tubes may not sometimes drive the spermatozoa towards the ovum. The spermatozoa can pass through a smaller canal than the ovum, hence it is easier for the male element to go up than the ovum to come down. As a diagnostic point of an early tubal mole I think the most valuable is the menstrual period which stops at the proper time and then continues, but not profusely, for a couple of weeks. You may find no complaint of pain or signs of fainting. On examination you will discover nothing and the next period will appear at the proper time. The mole may abort through the fimbriæ, but it will not rupture, as it has ceased to grow.

I have, in doing bimanual examinations, ruptured four ectopic gestation sacs which necessitated

immediate operation on account of the hæmorrhage. In ruptured ectopic pregnancy the pain is far greater than is experienced in tubal abortion, the patients becoming blanched and shocked. This is now followed by a vaginal loss of blood which is never so free as in a uterine abortion. I lay great stress on the complaint of pain followed by faintness from which the patient recovers, to be later followed by vaginal bleeding. In ectopic pregnancy the patients faint from shock and hæmorrhage, while in uterine abortions only in proportion to the amount of blood lost. Note well that there is always some enlargement of the uterus in an ectopic pregnancy, but never in a full term is it larger than a two to three months' pregnancy. I often wondered why we get a slow, dribbling hæmorrhage coming on even without a cessation of a period. I think in these cases a mole has formed in the tube and the ovum has died. The death of the fœtus causes a loosening of the *decidua vera* and hæmorrhage results and continues until it comes away in a mass. This is three-corner shaped, like a cast of the body. I have had a number of these specimens, but in the majority the decidua degenerates and is passed in pieces. The two full term ectopic pregnancies I have seen I will describe on account of the difficulty of their diagnosis.

The first one ruptured into the left broad ligament and then continued to grow and lifted up the peritoneum of the posterior wall of the abdomen, as the intestines were adherent to the front of the sac. The uterus was easily recognized to the right of the sac after the fœtus, which was dead, had been removed. In this case I removed three-quarters of the sac and left the lower part, which I sutured up without drainage. The woman made a good recovery and has had three children since. This condition was not diagnosed until the patient was on the table and the abdomen was opened. It was only after the fœtus was removed and the absence of contractions in the wall was noticed that we decided that the condition was an ectopic pregnancy. The fœtus being dead and slightly macerated, the large, thin placenta was easily peeled off.

In the second case we diagnosed an ectopic pregnancy as soon as the patient was examined. We could not recognize the fœtal heart or fœtal movements. The intestines were also in front of the sac and were easily peeled off. The placenta was also easily removed.

Braxton Hicks's sign could not be elicited in this case. Giles, quoted in Eden's "Midwifery," gives in his diagnosis a most useful help in understanding the rupture of an ectopic and why one ovum dies and the other will continue to grow. It all depends upon whether the amnion ruptures when the tube bursts.

Conclusion.

I trust these notes pointing out the pitfalls of diagnosis may be of use even to some of our seniors, as I am sure we have at times failed in coming to a correct solution.

I have given you the results of a very extensive experience of a quarter of a century in the diagnosis of pregnancy. I cannot say I have made any fresh discovery, but have drawn attention to the violet cervix and to the extreme value of Jacquemin's sign by daylight.

THE DIAGNOSIS OF WHOOPING COUGH.

By LUXFORD MEAGHER, M.B., B.S. (Melbourne),
Melbourne.

THE diagnosis of whooping cough is of interest apart from academic reasons. Indeed, it is urgent. This is well understood by the average mother, and much more so by the mother of more than the average intelligence. The matter is of urgency for pædiatricians because it is extremely difficult to supply the answer. The mother's outlook may be understood from a conversation which I overheard at an adjoining table in a luncheon room in Melbourne. "My child had had a bad cough for weeks," said one lady to her friend. "He was not getting any better. I took him to the doctor and asked him if it was whooping cough. This is what he said to me: 'I will tell you madam, when I hear the whoop.' The silly fellow! I could have told him that myself." That is the position in a nutshell. We are expected to tell without hearing the whoop. Can we? If the cough lasts a long time, is worse at night and ends in vomiting, then it is whooping cough, say some. Others, that if there is a long whistling inspiration at the end of a succession of expiratory puffs, then, even if the "characteristic" whoop is not present, it is whooping cough. Certainly the child with whooping cough has a puffy face and occasionally an ulcer on the frænum of the tongue, even when there is no whoop. Even in these circumstances truly, it may be important information to the mother of a family that her child has whooping cough, for reasons of prophylaxis as well as treatment. But in the majority of cases the doctor will not be thanked for his opinion in the late stages. Why? Because the treatment is of vital importance. Apart from the institution of general constitutional and hygienic treatment, feeding and so on, the cough must be stopped. Only those with experience of it can realize the scandal of a little child's awakening at night in a fright, in a paroxysm of coughing, clinging to the cot rails and seeking anything for comfort and moral support, in the fear of suffocation. The question must be answered because upon it depends the adoption of effective antispasmodic treatment. The careful mother wishes to know when her child has a bad suffocating cough, will it run its course or will spasm set in. A cough mixture and the open air will cure an ordinary cough the mother knows well. But in whooping cough the physician must intervene. "I diagnose it on the clinical signs," says one doctor. Yes, but if the clinical signs are not patent; if the patient is seen before the spasm is developed, I defy the physician to proceed with sufficiently vigorous antispasmodic treatment. Man can act only according to the faith that is in him. If this faith fail, the physician will not be master of the cough.

I think it is time we discarded the phrase, "the characteristic whoop." The disease is an infection characterized by the absence, frequently from the entire course, of the whoop which is really a crow-

What percentage of the whole are these cases? A very large percentage, I believe. Still ("Common Disorders and Diseases of Childhood") states:

During the early catarrhal stage which precedes the appearance of the characteristic whoop, the larynx sometimes shares in the catarrh of the respiratory tract. I know of no way in which the significance of the laryngitis can be recognized in such cases, but to be forewarned of the possibility is, at any rate, to be forearmed against surprise!

He reports a case in confirmation of the statement.

"Cough with a distinctly paroxysmal character" is mentioned by John Thomson ("Clinical Study and Treatment of Sick Children") as "most marked in whooping cough, but present in some degree in influenza and severe bronchitis." He sums up the available, incontrovertible evidence of the existence of the disease as follows:

A cough, worst at night, occurring in paroxysms and ending in vomiting, almost certainly indicates whooping cough, and if there is a noticeable puffiness about the eyelids or an ulcer under the tongue, the diagnosis is strongly confirmed.

But this is not the early diagnosis. "When a severe suffocative cough occurs in a very young baby," he says, "it is always well to think of whooping cough as possible, even although there is no distinct whoop present."

Osler is not very helpful:

A persistent paroxysmal cough, without sufficient signs to explain it, should excite suspicion. When the whoop occurs, the diagnosis is easy, but there are doubtful cases, particularly during epidemics, in which a series of expiratory coughs occurs without any inspiratory crow. The spasmodic cough due to bronchial glands may cause difficulty.

Price ("Text-book of the Practice of Medicine") says:

In the absence of known exposure to infection, diagnosis may be impossible until the whoop is heard, but the significance of a paroxysmal cough, worse at night and terminating in vomiting, should not be overlooked. The disproportion between the violence of the cough and the accompanying physical signs in the chest is also noteworthy.

The difficulty in establishing the diagnosis upon the clinical signs is emphasized by Finkelstein (*"Lehrbuch der Säuglingskrankheiten"*) as follows:

Die Diagnose stosst häufig auf Schwierigkeiten, weil die bezeichnende pfeifende Inspiration zwischen den einzelnen Hustenstossen, sehr oft vermisst wird. Nur bei älteren Säuglingen kommt sie einigermassen regelmässig vor und auch da nicht immer bei allen, sondern oftmals nur bei vereinzelten Anfällen. Je jünger der Kranke, desto unwahrscheinlicher ist ihr Auftreten. Ich habe einmal in einer ausgedehnten Anstaltsepidemie, nur drei oder vier grössere Säuglinge, in typischer Weise husten hören, während bei allen anderen, das "Ziehen" fehlte . . . . Bei dieser atypischen Ausbildung, verbleibt entweder der einfache krämpfige Anfall, oder es tritt . . . nämentlich bei ganz kleinen . . . an dessen Stelle ein, an kurze, trockene, Hustenstosse angeschlossenes Auspressen der Luft, begleitet von kräckzenden und würgenden Lauten. Sehr bezeichnend ist es wenn der Husten mit Niesanfällen abwechselt.

I take the liberty of rendering the foregoing passage thus:

The diagnosis frequently presents difficulty because the characteristic whistling inspiration between individual bouts of coughing is often wanting. Only in older infants is it in some sort regularly present and not in every case, but often only in isolated attacks. The younger the child, the less likely is its appearance. Once, in a widespread epidemic in an institution, I heard only three or four of the larger infants cough in typical fashion, while in all the others, the "indrawing" was wanting. In this atypical evolution there remains either the simple spasmodic attack or in its place, markedly in the case of the very little ones, appears a short, dry paroxysm of coughing associated with the expulsion of air and accompanied by croaking and choking sounds. Very significant it is when coughing alternates with attacks of sneezing.

Feer, Director of the University Hospital for Children, Zürich (*"Lehrbuch für Kinderheilkunde"*), discussing the catarrhal stage, states:

Anfänglich unterscheidet nichts von einen gewöhnlichem Katarrh, ein verdacht wird nur dann rege, wenn eine Infektionsquelle bekannt ist.

There is nothing to differentiate cases at the outset from ordinary catarrh, and suspicion will only be excited when a source of infection is known.

He further states, on the subject of diagnosis:

Popischill glaubt, aus eigenartig klingenden, kleinblasigen Rasselgeräuschen, an der basis der Lunge, bei gleichzeitig vermindertem oder aufgehobenem Veiskularatmen ohne deutliche Dämpfung, die Diagnose mit Sicherheit machen zu können.

Popischill is of opinion that he can make the diagnosis with certainty, by peculiar, fine, tinkling râles at the lung base, with enfeebled or suppressed breath sounds, without definite impairment of resonance.

Feer's text upon the diagnosis of whooping cough otherwise is as follows:

Die Diagnose des Keichhustens ist bei ausgeprägten Anfällen leicht zu stellen wenn der Arzt bei einem solchen Anfall zugegen ist. Besonders leicht wird die Diagnose, wenn mehrere Kinder einer Familie befallen sind. Im Notfall kann man einen Anfall hervorrufen sofern nicht kurz vorher, einer erfolgt ist. Am einfachsten, geschieht dies durch Einführung des Spatels in den Mund und durch Kitzeln des Zäpfchens; genügt dies nicht, so hilft oft ein Druck auf den Kehlkopf oder auf die Trachea von aussen. . . . . Kommt der Arzt nicht zur Beobachtung einer Anfalles, so lässt sich doch oft aus der Anamnese die Diagnose stellen: regelmässige Hustenanfälle die auch nachts auftreten, mit "Ziehen" endigen und bei denen es zu Auswurf bzw. zu Herauswürgen von zähem Schleim, zu Erbrechen kommt. Bei Husten anderer Ursache bringen die Kinder bis zu 8 bis 10 Jahren in der Regel kein Sputum zutage, so dass jedes jüngere Kind von dem man erfährt dass es Auswurf hat, auf Keuchhusten verdächtig ist. Das Auftreten der Anfälle in regelmässigen Intervallen auch in der Nacht, der Mangel an objektiven Lungensymptomen bei heftigen Husten, sprechen ebenfalls für Keuchhusten. Oft helfen auch die Symptome der Stauung im Gesicht, ein Ulcus frenuli linguae, Blutungen im Auge usw. zur Diagnose. Sehr schwer oder unmöglich wird die Diagnose, wo bloss ein Reizhusten ohne deutliche Anfälle besteht, oder in der Zeit des Stadiums catarrhale, wo die Anfälle noch nicht entwickelt. sind. Ohne bekannte Infektionsquelle oder Keuchhustenkranke in der Umgebung, muss hier die Diagnose bis auf weiteres offen gelassen werden. Oft is es längere Zeit oder überhaupt nicht zu unterscheiden ob es sich um echten Keuchhusten oder nur um einen keuchhustenartigen Katarrh anderer Ursache handelt. Damit ist aber die Spezifität des Keuchhustens in keiner Weise erschüttert, die ihren sicheren Beweis in den epidemiologischen Verhältnissen findet. Differentialdiagnostisch sind zu erwägen, gewisse Erkrankungen der oberen Luftwege, Bronchialdrusentuberkulose und Hysterie. Adenoide Vegetationen und frischer Rachenkatarrh verursachen oft einen heftigen Husten, der auch nachts auftritt, wenn das im Rachen herunterfliessende Sekret reizend wirkt. Der Husten tritt aber hier unregelmässig und häufig auf, er ist nicht progressiv und entwickelt sich nicht zu Anfällen. Gewisse

Formen von Grippe bewirken anhaltenden Reizhusten, der bis zum Erbrechen führen kann. Das Auftreten der starken Hustenattacken gleich zu Beginn der Erkrankung, mit Fieber und Rasselgeräuschen, die Häufigkeit der Anfälle sprechen gegen pertussis. Am meisten Ähnlichkeit mit Keuchhusten bietet der Husten bei Bronchialdrusentuberkulose. Dieser besitzt häufig einen krampfartigen Charakter; durch Druck der vergrösserten Drüsen auf den Nervus vagus kann er bis zum Herauswürgen von Schleim und bis zum Erbrechen anhalten. Es fehlt aber, meist die ziehende Inspiration, der Husten hat manchmal einen schrillen metallischen Charakter und kann über viele Monate andauern, ohne dass ein An- und Abschwellen seiner Intensität, wie bei Keuchhusten festzustellen wäre. Daneben finden sich gewöhnlich, andere Anzeichen, welche auf das Grundleiden hinweisend unregelmässiges Fieber, Abmagerung. Dämpfung in inteaskapularraum oder charakterische Schatten im Röntgenbilde. Eine Imitationsneurose auf hysterische Basis kommt nur bei älteren Kindern und auch hier nur ausnahmsweise in Betracht. Das Fehlen der Anfälle im Schlafe ermöglicht allein schon die Unterscheidung.

A rendering of Feer's opinion is as follows:

The diagnosis of whooping cough is, in pronounced attacks, easy to make if the doctor is present at such an attack. Particularly easy is the dignosis if several children of a family are attacked. In the last resort one can evoke an attack if one has not recently occurred. The simplest method is by introduction of a spatula in the mouth, and tickling of the uvula; if this does not suffice, external pressure on the larynx or trachea may help . . . If the doctor does not witness an attack, often the diagnosis may be given by a history such as the following: Regular spasms of coughing which also occur at night, and which, ending with an "indrawing," lead to vomiting with the production of tenacious sputum. In coughing from other causes children up to the age of eight to ten years usually do not produce sputum, so that in younger children who are known to expectorate, the suspicion of pertussis arises. The occurrence of the attacks at regular intervals, also in the night, the absence of objective lung symptoms in the presence of severe cough, speak likewise for whooping cough. Frequently helpful in the diagnosis also are the symptoms of congestion of the face, an ulcer of the *frenum linguæ*, and conjunctival hæmorrhages. The diagnosis becomes very difficult or impossible in those cases in which there exists an irritative cough without definite attacks, or in the period of the catarrhal stage in which the attacks are not yet developed. Failing a known source of infection, or in the absence of sufferers from whooping cough in the neighbourhood, the diagnosis must remain in doubt until a later date. Often it cannot be decided for a long time, if ever, whether a true whooping cough or merely a pertussis-like catarrh of another cause is present. But this by no means disproves the specificity of the infection which finds its certain proof in the epidemiological features. In the differential diagnosis are to be considered certain affections of the upper respiratory passages, bronchial gland tuberculosis and hysteria. Adenoids and acute pharyngitis often cause a vigorous cough which also occurs at night, when the secretion, descending in the pharynx, causes irritation. Here, however, the cough is irregular and frequent, is not progressive and does not go on to attacks. Certain forms of influenza cause a persistent, irritative cough which can lead to vomiting. The occurrence of severe paroxysms of cough coincident with the onset of the sickness, with fever and râles, and the frequency of the attacks, speak against pertussis. The nearest approach to the cough of whooping cough is that in bronchial gland tuberculosis. This possesses frequently a spasmodic character; through pressure of the enlarged glands on the vagus nerve, it can lead to the production of mucus and to vomiting. But mostly there is lacking the drawing inspiration, the cough has sometimes a shrill metallic character and can last for months without one being able to determine an increase or diminution of its intensity as in whooping cough. In addition there are usually other signs which indicate the primary disease; irregular fever, wasting, diminished resonance in the interscapular space, or characteristic shadows on the X ray plate. An imitation neurosis upon a hysterical basis comes in consideration only in older children and exceptionally. The absence of attacks in sleep renders possible the differentiation.

The considerations mentioned by the authors quoted, show that the attacks can be simulated by a number of other clinical conditions and that the differentiation, after careful consideration, may be difficult, if not impossible, for these conditions may well exist coincident with the onset of whooping cough. The search for some more definite indication leads us to a consideration of the blood picture, for it is the opinion of many observers that in the early stages of the infection there are characteristic findings. One's own observations in cases of undoubted whooping cough and in three recent cases, of which two were of doubtful diagnosis, lead to endorsement of this view. A considerable leucocytosis and a striking increase in the lymphocyte count, especially of the small lymphocytes, are mentioned by many authors.

Finkelstein remarks:

Ob in zweifelhaften Fällen, der Befund einer Lymphozytose im Blute, die Diagnose verlässlich sichern kann, müssen ausgedehnte Erfahrungen lehren. Für die dringliche Erkennung der Frühstadien, lässt diese Erscheinung jedenfalls in Stich da sie erst in der dritten oder vierten Krankheitswoche auftritt.

Whether in doubtful cases the finding of a lymphocytosis in the blood can confirm the diagnosis must remain for extensive observations to prove. For the reliable identification of the early stage this phenomenon, at any rate, is undependable, because it appears first in the third or fourth week of the illness.

Feer states:

Das Blut erfährt oft eine Vermehrung der weissen Blutkörperchen bis zu 20,000 *und mehr. Es handelt sich hauptsächlich um Vermehrung der Lymphozyten auf der Höhe der Krankheit.*

The blood often shows an increase of the white cells to 20,000 and more. There is chiefly an increase of the lymphocytes at the height of the sickness.

Still reports as follows:

Many observers have laid stress on the high lymphocyte count in whooping cough as an aid to diagnosis in the catarrhal stage before any whooping has begun. In a child of three years, 20,000 to 30,000 white cells of which at least 60% are lymphocytes, is not uncommon in whooping cough. The lymphocytosis increases until the whooping stage; it then wanes and gradually disappears. The blood picture of whooping cough, however, is apt to be disturbed by acute inflammatory complications, especially bronchopneumonia, which tends to increase the polymorphonuclears, so that the lymphocytosis is less obvious. For instance, in a girl aged 22 months who had bronchopneumonia with whooping cough and had only been heard to whoop the day before the blood count was taken, there were whites 43,600, and of these polymorphonuclears formed 80·4%, lymphocytes 18·4%.

John Thomson on this point says:

The leucocytosis of whooping cough is peculiar and may be of importance as an aid in doubtful cases. It is present in the catarrhal stage and during the first three weeks of the paroxysmal cough. The number of the white cells varies from 10,000 to 85,000, and often reaches from 20,000 to 30,000. The main characteristic of the blood count is that while the polymorphs are approximately normal in number, the lymphocytes of all kinds are always increased, absolutely or relatively, and usually to a very considerable degree. When whooping cough is complicated

by bronchitis or bronchopneumonia, the leucocytosis is, of course, greater than in uncomplicated cases; it may even amount to 150,000. When marked lymphocytosis or an unusually high degree of ordinary leucocytosis is met with in a case of bronchopneumonia, it should always suggest the probable presence of whooping cough.

Emerson ("Clinical Diagnosis") states:

In whooping cough the leucocytes, especially the lymphocytes, are much increased, the counts averaging 40,000. This leucocytosis is more pronounced the younger the child is. Its early appearance makes it of great value in diagnosis. It begins during the catarrhal stage and, continuing through the paroxysmal stage, reaches its maximum during convalescence. The increase of the count would seem to be due to an increase of the lymphocytes especially, but others claim it to be a true leucocytosis.

Osler has to say:

There is usually a marked leucocytosis (15,000 to 25,000) which may appear early. There is generally a marked increase in the lymphocytes, and myelocytes may be found.

The case which directed my attention afresh to the question of lymphocytosis was that of S.A., a girl, three years of age, who was brought to me on September 9, 1929.

She was suffering from "a cold, like whooping cough." She was coughing, and according to her mother's story, coughed till she brought phlegm up. She used to "catch her breath" as a baby. She awakened every night with the present cough, and the cough had lasted two weeks or more. She had recently a poor appetite, but usually was a big eater and was constipated. She became dyspnœic during the fits of coughing and was afraid. She was not a nervous child and had not previously been ill. The family history was not significant. She was a pale, well developed child of stocky build. Examination showed a chest of asthenic build but well furnished with muscles. The musculature generally was flabby. There were sticky râles on both sides of the chest. Examination of the heart showed the apex beat in the fifth space, one-half a centimetre within the nipple line. The rate was 124 per minute. The abdomen was protuberant. The tonsils were finely spotted with exudate and appeared to be the seat of a chronic infection. The child coughed during the examination upon the introduction of a spatula into the mouth. There was a long-drawn inspiration but not a whoop. The eyes were suffused and the child was dyspnœic and exhausted after five bouts of coughing. The mother did not believe the child was infected with whooping cough and made merely an incidental inquiry as to this possibility. Immediate symptomatic treatment was directed to the bowel condition, for which calomel in 0·015 gramme (quarter grain) doses was prescribed in addition to an alkaline mixture containing the compound tincture of rhubarb and tincture of aloes. The mother was instructed to rub the child's chest with camphorated oil, a throat gargle was prescribed and for the cough the following mixture:

Potassii iodidi, 0·18 gramme (three grains).
Vini ipecacuanhæ, 0·36 mil (six minims).
Tincturæ scillæ, 0·3 mil (five minims).
Tincturæ belladonnæ, 0·24 mil (four minims).
Phenazoni, 0·12 gramme (two grains).
Aquam ad 4·0 mils (one fluid drachm).

This was ineffective. A film made from the tough white sputum which was expectorated in fair quantity, was stained by Gram's method. It showed many degenerated leucocytes of the polymorphous and mononuclear varieties, some pneumococci and a few bilobed nuclear cells four or five times as large as the leucocytes. On the eleventh of September the right side of the patient's chest was full of râles; the left was clear. The child was not any better. Permission for a blood count was readily given by the mother, to whom it was pointed out that a definite diagnosis and energetic treatment depended on the result. The count revealed a leucocytosis of 29,000. A stained blood smear showed what to me was an astonishing picture, a monotonous field of small lymphocytes. To find the polymorphonuclear cells required almost a search. The differential count was: Lymphocytes (all of the small variety), 80%; polymorphonuclear cells, 20%. An injection of the mixed pertussis vaccine containing fifty million *Bacillus pertussis*, ten million pneumococci, ten million *Bacillus influenzæ* and fifty million *Micrococcus catarrhalis* was given without delay. On the thirteenth a similar dose was given. On the fourteenth the signs in the chest were more profuse. The temperature was 37·4° C. (99·4° F.), the apex beat was in the nipple line and there was 0·5 centimetre right cardiac dulness. The cough was slightly less violent. The parents stated that the nocturnal paroxysms were less frequent and the child was less distressed. On the fifteenth a bromide and belladonna mixture was substituted for the previous cough mixture, and the third injection, consisting of four hundred million *Bacillus pertussis*, fifty million *Bacillus influenzæ*, fifty million pneumococci and one hundred million *Micrococcus catarrhalis*, was given. The child's general condition was better, the paroxysms were less violent, but moist sounds persisted at the right base. The temperature was 36·7° C. (98° F.). On the seventeenth a final injection was given and the chest condition showed a distinct improvement. On the eighteenth the child was lively for the first time during her illness and showed an inclination to play. The chest was clear. On the twenty-second the child had definitely entered the convalescent period and had coughed only once, upon waking, about 6 a.m. By the eighteenth, when a second blood count was made, the leucocytosis had fallen to 21,000.

I was consulted regarding the patient's sister, Patricia, aged six, on the sixteenth. This child had been absent from the home during the height of her sister's illness, but previously both children had been on holiday at the home of a relation. On the date mentioned Patricia had developed a whoop, definite, though not marked. She had a temperature of 37·2° C. (99° F.). There were rhonchi in both lungs. She was treated with the following mixture: Sodium veronal 0·12 gramme (two grains), urethane 0·36 gramme (six grains), to be given every two hours till sleep ensued. She was given immediately the mixed pertussis vaccine containing four hundred million *Bacillus pertussis* and other organisms. On the next day the cough had lessened and she had slept well. The subsequent course of vaccine was as follows: On the eighteenth pertussis four hundred million, on the twenty-second one thousand million.

A differential blood count, done on the eighteenth, during what apparently was the sixth week after the infection, was: Small lymphocytes 56%, large lymphocytes 4%, polymorphonuclear cells 40%. She was convalescent following the twenty-second. The parents were definitely of the opinion that the injections had cut short the attacks in the case of both patients.

I saw a third child, aged five, a girl, on September 19. In her case the complaint was of a cough of six weeks' duration. She was an adopted child whose mother had died a year previously. The foster-mother stated she had vomited after coughing on the preceding day and had brought up half a teaspoonful of blood mixed with sputum. Vomiting terminated the cough. A whoop was not present. The significance attaching to the history of vomiting was doubtful, as the child for two weeks previously had been in the care of her father and had been given a great deal of rubbish to eat. There was a history of hæmoptysis on the part of the father, who suffered from asthma and was regarded as having weak lungs as a boy. The patient had had pneumonia at the age of two and again at three years of age. She was a lusty, cheery child. There were at the time of the examination rhonchi under the *manubrium sterni* and at the bases. Respirations were raised in pitch over the left lung. The heart rate was 104, the heart boundaries normal. The temperature was 37·4° C. (99·4° F.). She brought up after coughing, tenacious white sputum. The diagnosis here was in doubt because the symptoms were mild and the disease picture mitigated perhaps by the sturdy physique of the child. A count of 107 cells in a blood film was distributed as follows: Small lymphocytes 41, large lymphocytes 12, polymorphonuclear cells 32,

transitional cells 9, eosinophile cells 11, large eosinophile cells 1, large polymorphonuclear cells 1. The cough was paroxysmal, with a prolonged inspiration terminating in the expulsion of creamy-white muco-pus. The blood picture, together with the clinical condition and the history, was sufficient to clinch the diagnosis and vaccine treatment was instituted without delay. She was given, therefore, on the day the first examination was made, one thousand million pertussis vaccine. That evening she coughed a great deal and was feverish and vomited after coughing, several times. On the twenty-first a dose of five thousand million was given. On that evening she did not cough at all, though she was feverish. A third dose of five thousand million was given on the twenty-third. On the twenty-fourth there were still rhonchi in the chest. A final dose of five thousand million was injected on the twenty-fifth. At this date the heart rate was 92. The apex beat was slightly displaced to the left, but was tranquil. On the twenty-sixth she spent a good night. On the twenty-eighth the temperature was 36·7° C. (98° F.), and the chest clear. There was right cardiac dulness. Afterwards there were desultory fits of coughing in the day time, but the acute attack was checked and the child's condition satisfactory.

A feature of these three cases was the conviction on the part of the parents that the vaccines were of distinct benefit. A conclusion I draw from these cases is that vaccine treatment is of benefit and should be used at the earliest opportunity.

An interesting communication on the diagnosis of whooping cough is included in the August, 1929, issue of the British *Archives of Disease in Childhood,* which came to my notice since the foregoing notes were collected. It concerns the alternation of fits of sneezing with whooping. The authors, A. Moncrieff and R. C. Lightwood, of the Hospital for Sick Children, Great Ormond Street, London, report observations by French and German writers dating from 1883, of paroxysmal sneezing, hiccup, and yawning as variants of the whoop, and point out that pertussis taking the form of a persistent, unusually severe coryza, may remain undiagnosed. May I be permitted the observation that herein lies the argument for an examination of the blood in doubtful cases?

THE MENTAL HYGIENE OF CHILDHOOD.[1]

By M. V. GUTTERIDGE, B.Sc.,
The Principal of the Free Kindergarten Training College, Kew, Victoria.

"STRANGELY enough the view is usually prevalent that mental hygiene has to do, not with the normal, but with those who have no mind, or who have disordered minds, the feeble-minded, the defective, the insane." (Burnham: "The Normal Mind.") I venture to state that mental hygiene has chiefly to do with the normal mind and more than chiefly to do with the normal child mind. Child hygiene cannot be divided. Bodily and mental hygiene have but a single aim—to keep the well child well and the normal child normal. Mental hygiene has to do with very simple things, such things as how to make a child like spinach, how to induce the sleepless child to form a habit of sleep; how to obtain obedience without ruining a child's independence; in short, how to help a child to become all that he might is quite within the realm of study covered by the term "mental hygiene." Instead of being a morbid science, as popular belief would have it, mental hygiene is full of the most joyous assurance of ultimate health, if all will unite in studying the A B C of mental development in childhood. This is surely the fairy godmother's greatest gift, that which we most fervently wish for a child: a life built upon the solid foundation of mental health, without fears, without anxieties, without the temper habit, with no prejudices and few dislikes; in fact with everything that makes it easy to face life happily and successfully.

Until it is proved otherwise, we can take it for granted that a child at birth is mentally fit and normal. He is certainly possessed of no prejudices and no false attitudes; recent research seems to prove that he possesses only two fears and one cause of anger. Heredity can give a child an individual start, but it has little power over the actual reactions that a child will adopt and which will become for him his habitual way of facing certain situations.

When more is known of a child's mental life and when that which is known is generally and popularly accepted, a child's development will be better assured than it is at present. Unfortunately we have to face the fact that many children do not fulfil the promise of their babyhood and do not become that of which they are fundamentally capable. The damage is usually done somewhere along the line between birth and school age.

Who is responsible? All of us who in any way touch child life at any point and in any capacity, are responsible, if we have added to a child's fears, made him shy, anxious, angry, rebellious or puzzled, or in any way have made it difficult for him to meet similar situations again.

The urgency of these problems of childhood has led to the great importance now being placed in all civilized countries on the study of the preschool child and his needs, both physical and psychological. This study has taken the form of joint research which is being carried out by medical practitioners, psychologists, teachers, nurses and parents, in short, by representatives of all those professions that touch child life. It is a significant fact that mental hygiene is built upon the knowledge obtained from all these sources and thus is able to bring a wide range of expert views to bear upon its problems. This knowledge is needed by all those who attempt to guide children. Otherwise they might fail to see the significance of the simple activities of childhood or to detect any unusual signs that may be manifest in a child's everyday behaviour.

"Habits are the tools by which we achieve health, happiness and efficiency. Not only our ability to make friends and retain them and to fit ourselves into community life with ease and satisfaction, but

[1] Read at a meeting of the Victorian Branch of the British Medical Association at the Medical Society Hall on Tuesday, June 24, 1930.

also our resourcefulness in getting on with ourselves in peace and contentment are to large extent mental habits. The person who is without friends, unhappy, poorly adjusted to his home, school or business, who is dragging along, uninterested and inefficient, if not physically or mentally unfit, is usually a creature whose mental habits are inadequate to meet his daily needs." (Thom: "Everyday Problems of the Everyday Child.") The source of all these habits lies in the child's earliest years. A successful life is difficult to build on any foundation other than a victorious childhood. A child who is able to manage childish problems, to overcome disappointment without temper, to find his own enjoyment and to fill each day with something of interest and fun will find the world a good place in which to live and those about him good to live with. Every act counts; every act is apt to be repeated and to become a habit, whether for good or evil. If it is one that will be helpful in life and will function constructively in usual situations, it is assuredly a "good" habit. If, on the other hand, it is destructive to the child's personality and has to be "broken" later, there is nothing to commend it and it is certainly to be ranked as a "bad" habit. John Watson, of Johns Hopkins University, proved that two short, sharp, sudden noises when a child was about to touch a rabbit were enough to form a habit of fear towards all things woolly or hairy, while Cover Jones, of the University of California, found that it took weeks to conquer this habit of fear by systematic building up of a new habit of confidence (a few minutes *versus* weeks, perhaps months, of patient work).

All the mechanism of the nervous system seems built to form habits and nothing is provided for habit breaking!

The first step in attempting to safeguard the mental health of the child is to examine the environment in which he lives, including, of course, the human environment. The attitude of those about him is the strongest factor in his mental development. Upon their knowledge and their understanding depend greatly his attitudes, his inclinations, his success. This environment must be such that it is worth while for the child to adjust to its demands.

Mental health calls for a gradual "weaning" from the dependence of babyhood to an independence that will stand the child in good stead all through life.

Four Milestones: Norms of Child Development.

1. By his first birthday the child may be expected to: (i) Drink from a cup and eat from a spoon (bottle discarded); (ii) sleep alone, without soothing, "dummy" or bottle; (iii) have control of his bowels, adult still taking responsibility; (iv) be content with little attention (suitable playthings provided).

2. By his second birthday he may be expected to: (i) Feed himself with a spoon and cup; (ii) have control of both bowels and bladder; (iii) have a dry bed at night; (iv) sleep in a room alone night and day time; (v) pull off his own shoes and stockings, hat and coat or any article that does not require too much undoing.

3. By his third birthday he may be expected to: (i) Eat his entire meal without help; (ii) undress himself and put on easy garments; (iii) wash himself and brush his teeth (it is essential that he has easy access to mirror, basin, own towel, comb *et cetera*); (iv) take responsibility for bowel and bladder control (asking adult for help when necessary); (v) play well with other children of same age.

4. By his fourth birthday he may be expected to: (i) Serve himself at table (pouring own milk *et cetera*); (ii) dress himself and fasten easy buttons; (iii) take complete control at lavatory; (iv) play cooperatively with other children and be able to meet strangers easily; (v) put away toys, feed pets *et cetera* without being reminded.

[Quoted (with slight additions) from D. E. Hall, *The Mental Hygiene Bulletin*, December, 1929.]

A child reacts by some activity to each and every stimulus. This is the normal way of development. Unfortunately, by our neglect of his play needs, he has often no other choice than to engage in an activity that we deem "naughty." Then follows the disastrous effect upon us, that we are apt to get angry, respond with our "don't," which, by its negativeness, does nothing to relieve the strain, the child goes on "annoying" and finally loses his temper. We so seldom realize that a habit of this form of response is likely to be the result of our misunderstanding of the situation. The lack of opportunity of healthful, happy, constructive play is often the complaint from which he is suffering. If we would but realize that this may endanger his mental health and quite possibly his bodily health, we would deem it wonderfully worth while to study the specific needs of each stage of his life, which is a continuously evolving process, passing from birth to babyhood, from babyhood to childhood and from childhood onwards. Shall we deny him a garden, with a play room for wet weather, the possibility of adventure in this much too civilized modern life; experience with sand, earth, wood, water, trees and animals; the company of several children of his own age; with the understanding supervision of adults who themselves know how to play?

The nursery school and kindergarten meet these needs, linking up the home in endeavouring to safeguard the mental and bodily health of each child. Understanding the needs of each age, parents and school teachers together can plan for success and the child's development is assured to a greater degree than in any single endeavour.

The research into child problems should be followed by an equal endeavour on the part of parents and others who have the responsibility of children, to follow step by step and to plan a life for the children that is enlightened by all the knowledge at their disposal.

The cure of bad habits is possible, but requires infinite patience and often expert knowledge; the prevention of the initial reaction or, at any rate, of its repetition, is better, but cold and negative as compared to perfect all-round development, which is a positive growth of all that is good and constructive in life. It casts out fear and every other ill and enables the child to meet each situation happily in the spirit of one who conquers.

CHILD HYGIENE.[1]

By CONSTANCE ELLIS, M.D.
Melbourne.

I THINK I should begin by a warning to any readers of this paper, as I did to my hearers, that I do not profess to put before them any learned facts, any tabulations or "tabloid" advice on the hygiene of childhood. The paper consists only in some of the results of my own observations extending over a period rather longer than I care to contemplate.

I am dealing with the child after the period of weaning, which may be defined as the "time of accustoming the child to his new foods," as Dr. Derham told us in his paper, and I want to put before you some other elements of "accustoming" necessary to his development.

I take it that the "ego" or personality of the child consists in his hereditary self in its adaptation to his environment of place, people and things. Far be it from me to assert that this personality does not begin to operate at birth; I am sure it does. Hence our insistence on the care in habits, feeding and cleanliness during the first year, of which you have already heard. But in the second and third years we are dealing with the results of the enormous brain development of the first year, with its consequent developments in speech, in movements more and more coordinated, in the assertion of personality through likes and dislikes, and generally in the results of the child's growing memory of his own observations and experience, in short, with the psychological physiology of the child. It is the guidance of these developing activities that I mean in speaking of child hygiene. Such guidance is more than ever necessary in countries such as our own where, in a very large proportion of homes there is no separate nursery life, but the child lives in close association with the life of his parents and, especially if he is an only child, regards himself, often quite truthfully, as the centre of the picture.

The problem is a complicated one for the physician who must consider not only the child, but the nervous reactions and psychology of both his parents, to say nothing of his grandparents and his "sisters and his cousins and his aunts."

Cameron, in "The Nervous Child" (a book which I commend to you, if you have not read it), says that the nervous child is too often the child of the nervous mother, and may I add the nervous father, who is not always blameless in difficult situations, so that the cooperation of both parents is most necessary. The father comes home, perhaps tired after his day's work (or his afternoon's bad golf); some disciplinary process may be in progress and his comment may be: "Oh! let the poor little beggar do (or not do) so and so." Said "little beggar" is quick to note the difference of opinion and henceforth to try to play off one parent against the other. This quick perception and the consciousness of his own importance so engendered should lead the doctor consulted in regard to difficult children to hear all details and give most advice in the absence of the child. To hear all his mother's fears and troubles in regard to him satisfies his egotism and his unconscious desire to be the central figure in the domestic picture. The doctor consulted about such a child must be prepared to give much time and thought to the inquiry, not only to his physical examination, but to the smallest details of the child's life and surroundings. The time required for investigation and the judgement to be exercised in such cases may place them amongst the most difficult with which the physician has to deal.

The headings under which I would consider the hygiene of the child are: (i) Fresh air, (ii) clothing, (iii) food, (iv) clean habits, (v) sleep, (vi) exercise and play, (vii) rewards and punishments.

Fresh Air.

Most children in this country spend a large proportion of their lives in the open air, both sleeping and waking. The desirability of the open window at night (or the "sleep-out") is generally conceded by even moderately sensible folk. Inquiry into sleeping conditions, however, must never be forgotten and these should be inspected if possible.

Clothing.

Sensible clothing is desirable. Garments are usually few, loose, plain and washable, and whilst usually æsthetically satisfying both to mother and child, do not interfere with the latter's activities. The child can grub in the garden or sandpit to his heart's content without the reproach of spoiling expensive clothes. I still incline to the woollen combination undergarment and what is worn outside may be left to the individual taste. For night wear closed pyjamas for both sexes are desirable, for in all children we must remember and guard against the possibility of self abuse. We must accustom the mother to the knowledge that even her child may develop this habit; that it is not a sign of general depravity and original sin; and that it can be overcome, especially when it is recognized early, not by punishments, but by precept and help on the part of the adult.

Food.

The feeding of the child is perhaps the subject on which we are most often consulted and certainly the consideration of the diet of the two-year-olds and three-year-olds needs careful attention. Dr. Younger-Ross, in her book, "Feeding the Child—All Ages," has supplied us with a useful little manual which, though scientific, is simple enough to be given to the average mother as a guide in building up the child's meals. The child at these ages is being introduced to many new types of food; likes and dislikes tend to arise; self-feeding has to be encouraged and proper mastication inculcated. Times of meals should be regular and the child seated at the table, not nursed; nor should distrac-

[1] Read at a meeting of the Victorian Branch of the British Medical Association at the Medical Society Hall on Tuesday, June 24, 1930.

tions of toys, books or stories be allowed during the meal. He should be taught and encouraged to feed himself and his exploits in this direction praised, though, of course, only the gradual increase of muscular coordination will make this function complete. Self-feeding takes longer, so care must be exercised in keeping the food hot. As most children are conservative, any new food should be small in amount, lest it be rejected by the facility in vomiting which young children seem to possess. But likes and dislikes, unless very pronounced, should not be encouraged. I have not the time at my disposal to go into the manifold details of diet; you will find a variety of meals set out in Dr. Younger Ross's book. I am a fervent believer in the early introduction of meat to the diet, of the use of some hard food needing mastication, of the limitation of starchy, stodgy puddings. "What's the matter with Mary Jane? Lovely rice pudding for dinner again," is a true indictment of some people's ideas on children's diet. One of our most frequent "S.O.S." calls is that the child will not eat, that he refuses this, that and the other food. After careful inquiry and examination, including, of course, fæces and urine, and often observation of the child at a meal, one is justified in many instances in advising that if the food offered be refused and left uneaten, that no concern be expressed, but it be quietly removed and the next course placed before him without comment. On no account should any food be given before the next meal time. In general, a very short course of such wholesome neglect will be sufficient to overcome this phase, though it is sometimes necessary to enlist the help of a trained nurse or to institute some change in the personnel at meal time. On no account should his sense of importance be stimulated by being told how unhappy he is making mother or nurse, or that his father will be told on his return, or that pussy, or the little boy round the corner will be given his dinner.

Some part of the food should require mastication and this must be watched and encouraged, both for development of teeth and jaw and for good digestion, which, I feel sure, is frequently harmed by bolting of food. When a child is fed by mother or nurse, one frequently sees the helper with the next spoonful held ready suspended as it were, long before the previous mouthful has been properly chewed and disposed of. It is desirable that the mouth should be washed out after each meal, but the teeth must be cleansed at night and be very sure that sweet or biscuit is not given after this final cleansing.

Clean Habits.

For the bath I prefer a warm one given in the morning; during the summer the child can usually be accustomed to a quick cold douche to follow and this can then be carried on into the winter. If the household arrangements permit, an evening bath is most desirable (and in some cases absolutely necessary), but the washing of face and hands may be all that is required. In bathing and dressing the child should be encouraged to help himself, especially in the latter, and he is usually proud indeed when he can put on his own singlet and button his own shoes.

Training of the infant during the first year in good habits as regards micturition and defæcation will stand the older child in good stead. Action of the bowel should especially be made a matter of habit, at a regular time and under suitable conditions, for example, suitable size and height of the seat of the privy. Constipation may sometimes be the result of an inhibition because of the anxiety too often shown by the mother on this account; this is another phase similar to the self-importance over the food question and here again a little (apparent) neglect is often salutary. Dieting so that some roughage is present, encouragement of water drinking and abdominal massage are all helpful. Drugs may have to be resorted to, but naturally as seldom as possible, and their use carefully watched.

Micturition, too, should be regular, for example, either before or after meals and before going out. Do not suggest to the child when he is out that he may have the desire, but take advantage of any reasonable opportunity and so avoid unpleasant accidents with often unmerited punishment.

Sleep.

Another field in which early training will prove helpful is the habit of sleep. Going to bed without a light and the custom of regarding bed as the place where they go to sleep as a matter of course works quite well with some children, but individual children will require some consideration, especially in the matter of allowing a light. I myself was much younger than the rest of my brothers and sisters and when put to bed in an upstairs room my last injunction to my mother was "Don't forget the words" which was short for "leave the door open, talk so that I can hear you and put a biscuit under my pillow." I realize now that this indicated some dislike of the quiet and the dark, except the last-named requirement.

Keep up the morning sleep, or at least rest, as long as possible, since the child's day usually begins early and is very active both for body and brain; if this rest can be in the open air, so much the better.

There is one problem in relation to sleep and that is the story or the game at bedtime; this is very tempting and especially to the father, whose only hour this may be to spend with his child; very often it is the most enjoyable hour for both. The shrieks of laughter over the game, the round-eyed excitement over the story are all too fascinating. Some children are none the worse and will say "good-night" and settle down to sleep; in others the stimulation is too great and they may lie awake or fall asleep to dream and waken with uncanny fears. For such children a quiet hour before bedtime becomes essential.

Exercise and Play.

Most children get their exercise by free play, especially if garden and veranda are available. In our country the set walk is not now so usual. The motor drive is not good for young children; I am sure I have seen them often thoroughly upset by lengthy motor drives, though a short one that can get them readily to beach or open country is more tolerable.

Children need playmates naturally and only children especially so, both for training of the spirit of play and for that give and take which it is so necessary should be inculcated; the indulged child of today so easily becomes selfish and self-centred, a consummation devoutly to be avoided. Again I put in a plea for a little wholesome neglect; children love their own ideas about play and playthings and should be able to amuse themselves and should be encouraged to do so. The adult in the game, unless content to take a very subordinate position and not make suggestions, is really a nuisance. Kenneth Grahame, in his charming books, "Dream Days" and "The Golden Age," makes us realize this very clearly; but, of course, some grown-ups really play very well and enter into the spirit of the game. Set parties with expensive teas I regard as an abomination and I think sensible parents should set their faces against them. I don't believe the children of the age of which I am speaking enjoy them one bit and probably they pander far more to the pride and satisfaction of the various parents than to the pleasure of the infants.

Rewards and Punishments.

What to say as to rewards and punishments? Do not be chary of praise; we can all remember our pride when we received such recognition of effort. Praise is a great stimulus to well-doing and in reasonable homes some small added pleasure is sufficient reward if we are not dealing with the spoilt child. Punishment is, I suppose, sometimes necessary, but it should neither be undertaken whilst the adult is angry nor held too long over the head of the erring one. A little coldness of manner or the withdrawal of some small favour comparable to praise and pleasure under opposite conditions will often meet the case, especially in truthful and affectionate children. I remember a small boy who was told by his nurse he was not to have his evening chocolate; but, the nurse being out, he was unknowingly offered this by his mother at bedtime; he informed her of the embargo and she most rightly withheld it, though she said the temptation was great to give it to him as a reward for honesty. I may say that little boy has grown up into a very fine, lovable young man. The deadliest sin of all in the question of punishment is in threats that cannot be carried out, and though I do not admire corporal punishment, I would sooner the child had a good beating than be threatened with dire happenings impossible of realization.

To encourage the formation of good habits and to develop in the child the fine personality we desire for him, those people who come in contact with him must be able to control themselves in their daily lives and present to their children examples of courtesy, kindness and truthfulness in word and deed.

Reports of Cases.

TUBERCULOUS PYELO-URETERITIS OF THE RIGHT KIDNEY.

By M. GRAHAM SUTTON, M.B., Ch.M. (Syd.), F.R.C.S. (Edin.), F.C.S.A.
Honorary Assistant Urologist, Brisbane Hospital.

MRS. E. B., aged twenty-nine, who had had three children, was admitted to the Lady Lamington Hospital for Women in December, 1929, complaining of great frequency of urination, dysuria, pyuria, occasional hæmaturia, loss of weight, weakness and anorexia.

Cystoscopy revealed a bladder of normal capacity, with definite basal cystitis and considerable redness and œdema about the right ureteric meatus, but without tubercles or ulceration. The efflux from the right ureter was turbid and lacked force, that on the left appeared normal. Indigo-carmine injected intravenously appeared in four minutes and in good colour on the left, but was delayed fifteen minutes on the right side and then only in poor concentration.

Urine collected from the right side contained abundance of pus cells and few red cells and no organisms. Attempts at culture failed. Pyelography (right side) revealed extensive ulceration and destruction of all the calyces and pelvis and marked dilatation and irregularity of the ureter down to a stricture in the pelvic part of its course just below the lower border of the right sacro-iliac synchondrosis. The diagnosis was tuberculous pyelonephritis destroying the kidney with ureteritis and stricture. The left pyelogram was normal.

At operation on January 20, 1930, through a right lumbar incision the right kidney was freed together with the ureter as far as the brim of the bony pelvis. The pedicle was defined and the vessels ligated and divided. The kidney, still attached by a greatly thickened ureter, was then wrapped in gauze and the wound closed in layers except at the lower corner from which the ureter issued.

The patient was then turned on to her back and through a muscle-splitting incision over the right iliac fossa the the pelvic portion of the ureter was isolated extraperitoneally and traced under the uterine artery to the bladder; here it was divided between ligatures and its ends cauterized. The whole length of the ureter was then removed by traction on the kidney at the loin.

Pathological and microscopical examination by Dr. Duhig confirmed the clinical diagnosis of tuberculous kidney and ureter. Recovery was uneventful and the patient regained her health and appetite and gained 9·5 kilograms (a stone and a half) in weight.

On February 8, 1930, a twenty-four hours specimen of urine revealed no tubercle bacilli in smears or on incubation.

Eleven months after the operation she consulted me again complaining of indefinite pain in the left side of the chest and also precordially, some shortness of breath and faintness after exertion. She was easily tired and had lost 1·35 kilograms (three pounds) in weight. There was some frequency of micturition by day but she did not get up at night to pass urine and slept well. There was no cough nor sputum and there were no night sweats. Clinical examination revealed normal breath sounds and no adventitious sounds in her lungs. X ray examination of the chest revealed normal lung markings except for some increase in size and density of the hilar lymph glands.

Her heart was slightly enlarged, there was a systolic mitral murmur. The systolic blood pressure was 120 and the diastolic pressure 80 millimetres of mercury.

Intravenous pyelography was undertaken with "Uroselectan" and films were taken one quarter, three quarters and one and a quarter hours later. The best film was that taken at three quarters of an hour after the injection, but owing chiefly to gas in the colon overlying the pelvis this was hardly "diagnostic." At the same time that the "Uroselectan" was injected, the usual dose of indigo-carmine was given into the same vein, through the same needle and cystoscopy proceeded with. Only the merest suspicion of blue colour could be seen issuing from the left ureter meatus and although this was observed for fifteen minutes, it did not become darkened. The cystoscope was then withdrawn and the first picture taken. The patient then voided urine, after the second film the patient voided urine again, the urine still contained no blue. Its specific gravity was 1·035. Addition of hydrochloric acid produced a dense white precipitate. Cystoscopy at a subsequent date revealed a normal bladder except for a mild trigonitis; the right ureter meatus was functionless and healthy, the left normal. Indigo-carmine, given intravenously, appeared in four minutes and in good colour and force. The bladder urine was clear, its specific gravity was 1·024, it contained no albumin or pus. The left kidney urine was clear blue, its specific gravity was 1·020, it contained no albumin, but microscopically a few red cells were present (traumatic).

Examination of a twenty-four hours' specimen of urine on two occasions failed to reveal tubercle bacilli. Guinea-pig inoculation revealed no tuberculosis. Pyelography in the ordinary way, using half strength "Uroselectan," revealed a perfectly normal kidney and ureter.

Comment.

It was evident that the remaining kidney was healthy and that the patient's symptoms were cardiac in origin. In carrying out intravenous pyelography it was hoped to combine with it cystoscopy and chromoscopy to ascertain the function of the remaining kidney. This failed owing to the dye being discoloured by the "Uroselectan." At subsequent pyelography with half strength "Uroselectan" there was no renal pain or discomfort, but the patient had renal colic and pain four hours later, equally bad on both sides despite right nephro-ureterectomy. Although "Uroselectan" is an invaluable adjunct to our urological armamentarium, from the few cases in which I have used it I feel it might be improved so as to give a pyelogram of greater density. Doubtless a technique will soon be evolved so that it may be used as a functional test by noting its time of appearance and its concentration in the urine, but the ideal would be a dye combination with it also.

JUVENILE PARETIC NEUROSYPHILIS.[1]

By G. L. EWAN, B.Sc., M.B., Ch.M., Dip.Psych. (Sydney),
Newcastle, New South Wales.

JUVENILE paretic neurosyphilis is now generally recognized as a distinct clinical entity. The patients affected may develop in a comparatively normal manner, the disease first manifesting itself between the ages of seven and twelve years although the onset may be delayed in a few cases until adolescence, when failure of the mentality is more apparent. The memory becomes poor, there is poor motor adaptation, increasing mental deterioration, restlessness and phases of depression or anxieties; perhaps more or less vague harmless delusions and later epileptiform convulsions may occur. The psychosis is somewhat different from that of the adult as the patient's mental evolution is yet incomplete. The mental symptoms in the earlier stages resemble those of imbecility rather than insanity. Remissions do not occur as in the adult form. Attention has been drawn to the fact that the age of onset corresponds very closely to the length of time that elapses between infection and the onset of the parenchymatous disease in the adult. The malady is also fairly equally distributed as far as the two sexes are concerned as might be expected of a malady due to congenital syphilis. The physical signs are similar to those observed in the adult and the serological reactions are identical. The prognosis is necessarily grave and there is less hope of improvement than in the acquired paresis of adult life. The histopathological changes are also identical with those observed in the adult form. One other point which is worthy of emphasis is that there are many neuropsychiatrists who maintain that one does not find tertiary lesions in patients suffering from paretic neurosyphilis and that juvenile patients suffering from general paralysis give a history of heredity only and show no signs of congenital syphilis themselves. Although the former is generally the rule I have observed macroscopic evidence of tertiary syphilis at the *post mortem* examination of a patient who had died of paretic neurosyphilis, and as regards the latter, in the patient about to be discussed there was evidence of syphilis in the form of characteristic Hutchinson's teeth.

The patient, J.G., was a female child aged eleven years; she was a ward of the Child Welfare Department and there was no family history ascertainable. She was fairly well nourished though there was some evidence of atrophic changes of the skin. She was tremulous and unsteady in her gait and there was a generalized paresis of the skeletal musculature. There was a fine tremor of the tongue and some slight peri-oral fibrillary tremor; the facies was one of complacent stolidity or as it is often aptly termed "washing out of the expression," quite distinct from the Parkinsonian facies. The pupils were regular in outline and equal, but dilated and immobile to light and very sluggish in reaction to accommodation. There was also loss of the consensual reflex. The eye movements were good. She had fairly prominent frontal bosses. All the deep reflexes were equally brisk and some markedly exaggerated. The plantar reflexes were flexor and the abdominal reflexes very active. A slight right patella clonus could be elicited. Suitable test phrases revealed the characteristic slurring of the patient's speech. Since her admission to hospital the patient has exhibited a characteristic behaviour anomaly frequently observed in adult paretics, namely, an aimless destructiveness with a marked tendency to the hoarding of all kinds of rubbish. The blood serum reacted strongly to the Wassermann test.

The cerebro-spinal fluid reacted to the Wassermann test, the globulin was increased, the Tabata-ara reaction was positive and the cells numbered fifteen per cubic millimetre. The result of the bi-col-guaiac test was as follows: 4444441/2000.

[1] Read at a meeting of the Newcastle Hospital Clinical Society on November 5, 1930.

INTRADURAL RESECTION OF POSTERIOR PRIMARY DIVISIONS FOR INTRACTABLE SCIATIC PAIN.[1]

By R. V. GRAHAM, M.D., Ch.M., F.C.S.A.,
Honorary Assistant Orthopædic Surgeon, Lewisham Hospital; Honorary Demonstrator, Department of Anatomy, University of Sydney.

THE patient, A.E.C., aged thirty-eight, had his left thigh amputated in 1923 for gangrene of the leg. Immediately after the amputation he experienced pain referred to the distribution of the sciatic nerve, mainly referred to the big toe and little toe. The pain was of a very severe character and was persistently present; sleep was obtained only by the aid of drugs. Four reamputations were performed and then the end of the nerve was resected without his obtaining any noticeable relief. In all he had ten opera-

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on November 13, 1930.

tions of this nature extending over a period of seven years, but he derived so little relief from them that he was unable to follow his occupation for practically the whole of this time.

He complained of severe headaches; his eyes were prominent and there was an increasing tendency to fits during which he became unconscious for half an hour. He complained of inability to sleep or rest and had an extremely anxious, careworn expression. At this time his weight was 62·5 kilograms (139 pounds), 25·2 kilograms (56 pounds) less than it was at the time of the first amputation.

He was extremely tender to touch over the sciatic notch and the portion of the sciatic nerve in the amputation stump.

In May, 1930, sympathetic ramisection was performed on the affected side; this relieved the pain for about three weeks. On August 7, 1930, intradural resection of the posterior primary divisions of the third, fourth and fifth lumbar and first, second and third sacral nerves was performed. Care was taken to keep the patient's head low in order to prevent excessive loss of cerebro-spinal fluid; the dura was carefully sutured with fine catgut. Bleeding caused a little trouble, but was soon dealt with. The muscles were allowed to fall into place in the mid-line and the aponeurosis was sutured. A few days later there was a subcutaneous collection of cerebro-spinal fluid from which about twenty cubic centimetres were aspirated; it then gradually absorbed. The patient complained of headaches for a few days following the operation, but he has now made an uneventful recovery and has had no vestige of pain since. Muscular movements in the stump are still intact, but, of course, there is complete anæsthesia in the area supplied by the nerves which were divided. He has gained 7·2 kilograms (sixteen pounds) since the operation and has now resumed his former occupation.

The chief difficulty in the operation consisted in the identification of the correct posterior primary divisions for resection. As Elsberg has pointed out, the *ligamentum denticulatum* ends just above the posterior primary division of the first lumbar nerve and the posterior division of the third sacral nerve is the largest in this region. With these two landmarks identification becomes comparatively easy and resection of about five centimetres (two inches) of the affected primary division is easily accomplished.

Reviews.

A BOOK OF ESSAYS.

"A SURGEON" in "Essays and Addresses"[1] has collected a number of papers published or delivered over a series of years on sociological, biological and psychological subjects. In the first he discusses individualism and socialism from the biological standpoint. The author argues that while either is harmful if carried to extremes both are necessary in the constitution of the efficient State. A proper degree of socialism prevents waste of effort from incoordination and overlapping, while a correct degree of individualism is necessary to provide the State with the stimulus that makes for progress. An awakened civic conscience is urgently needed and at the same time the State must encourage the breeding of citizens of superior innate capacity. The next paper deals with the attitude of the State to antisocial diseases, such as the misuse of alcohol and venereal disease. These flourish because they do not receive sufficient public opprobrium. Sexual promiscuity is socially wrong, both because it often results in venereal disease which leads to inefficiency and expense and because it lessens the desire for marriage and parenthood. As we have prevented the action of natural selection we must combat these evils by environmental control. The startling suggestion is made that, since much of each person's life is unknown to the public and thus irregularities are facilitated, this secrecy must be curtailed. During the course of treatment medical men and nurses must point out to victims of these diseases the wickedness of their conduct and generally they must lose no opportunity of spreading a knowledge of right living and of inculcating the doctrines of preventive medicine. The State must see that all children are trained in sex hygiene and civic duty and equipped with a high moral and social sense. There will be much disagreement among readers as to the amount of success to be expected from these measures. It may even be argued that if doctors turned preachers, quacks would flourish even more abundantly than they do at present. Nor has adequate knowledge and moral instruction always prevented even medical students from contracting venereal disease or getting drunk. It is recommended that subscribers to hospitals should be informed by published reports how much of their money is spent on treating the results of promiscuity and drunkenness. Figures are given that permit the estimate that one in 4,000 of the population of England is admitted drunk to hospital once a year. Some may regard this as evidence of a high degree of national sobriety.

In some papers on hospital finance it is shown that the use of alcohol in hospitals has always been in accordance with public habits of drinking and that changes in hospital consumption have always lagged behind changes in these. The author pleads for further inquiry into the value of alcohol as a drug or beverage. We may conclude that his own view is that it is always harmful as either. However, Munsterberg has argued convincingly, as a psychologist, that a glass or two of beer after work makes for industrial efficiency.

Interest in work as a factor in industrial hygiene is well discussed. Formerly a large part of the stimulus to work was derived from the satisfaction that resulted from making things. That satisfaction is less attainable under modern conditions, so wages have risen to permit its purchase elsewhere. Industrial disturbances with a demand for shorter hours and higher wages would be diminished if this interest could be restored. Better factory organization combined with vocational selection and guidance may accomplish this.

A series of biological papers deals with the making of use acquirements, which are perhaps better known by the term acquired characteristics. Various theories about these are reviewed and it is suggested that they may be accounted for by a process of selection acting on varying responses to stimuli made by highly specialized cells, those responses beneficial to the cell surviving.

The best example of this process is shown by the neurone which does not divide. This process differs from ordinary natural selection by the size of the units involved and by the fact that no cells perish in the selection. It also differs from muscular hypertrophy which results from the multiplication of cells. The author concludes that use acquirements are not made by germ cells which are totipotential rather than specialized and whose chief function is division. This is in accord with Weismann's theory. The variations necessary for the action of natural selection are due to the competition between spermatozoa. Racial immunity to disease is due to natural selection. This is illustrated in the individual by antimicrobial immunity as displayed by phagocytosis with resulting death of cells. Antitoxic immunity is a use acquirement and results from a selection among intracellular processes without cell death.

The author is dismayed by the menace of national physical and mental unfitness. Birth control, applied from proper motives, may help to remedy this evil which is chiefly the result of heredity. However, many people are "carriers" of defects which they do not display.

The author believes that an adequate knowledge of genetics, combined with proper moral and religious training, would inspire most of these with such a regard for the welfare of the community that they would voluntarily seek sterilization. Then the question of compulsory sterilization, when necessary, by State action could be raised. The causes of the decay of past civilizations being biological, citizens with both good civic qualities and the

[1] "Essays and Addresses, Sociological, Biological and Psychological," by A Surgeon; 1930. London: H. K. Lewis and Company Limited. Demy 8vo., pp. 292. Price: 10s. 6d. net.

ability to transmit them should be given economic advantages to aid them to raise children and the dead weight caused by the procreation of the unfit should be removed together with injurious environmental influences.

In a final paper the author asks the question, "Is there a social consciousness?" and answers it in the affirmative. But as the psychological premisses which support his conclusion are extremely frail we may dismiss his remarks on this subject by describing them, in the words of one of his elderly friends, as "lacking the stately tread of the Athanasian creed, but as being quite as incomprehensible."

The book is well and clearly written and the views expressed are those of an earnest, thoughtful and moderate man. Although, perhaps, the papers contain little that is original, they are well worth considering by all medical men and laymen who are interested in eugenics, preventive medicine or community welfare, and social progress in the widest sense.

SURGICAL DIAGNOSIS.

GRAHAM'S "Surgical Diagnosis" is a comprehensive work in three volumes in whose production forty-two American contributors have shared.[1] In the preface Dr. Graham emphasizes the great importance of surgical diagnosis in that owing to the remarkable developments in the art of operative surgery much of the danger and fear has been removed from surgical operations and a new spectre of unnecessary and unwise operations has appeared. This, together with the decentralization of surgery, has resulted in the unfortunate fact that too often patients are operated on with too little preliminary study. The work has been designed so as to be of assistance to the surgeon as well as to his medical colleagues. Ætiology and pathology are fully discussed as inseparable from diagnosis, while treatment is dealt with only on broad general lines.

The list of contributors includes the names of leading American surgeons in each branch of surgical work and the author has been more than usually successful in combining the whole into a well balanced and exhaustive presentation of the subject.

Regarding the individual sections only a short reference is possible. All are of uniform excellence.

In Volume I, in the sections on infections only one page is devoted to hydatid disease and it is stated that the parasite has a certain predilection for the left lobe of the liver. Most Australian surgeons would not agree with this. Later on, in Volume III, however, Dr. Graham gives a more detailed and informative account of the disease as it affects the liver and quotes freely from the works of Professor Dew and Dévé on the subject.

Post-operative complications are well described by Cutler and Scott, who emphasize the fact, which is apt to be overlooked, that the operating surgeon's responsibilities and anxieties are by no means concluded with the insertion of the last suture at the operation.

In the chapter on post-operative psychoses appears the arresting statement that a patient who does not think he is going to get well, is not a fit subject for surgical operation. The importance of thrombosis and infarction in post-operative pulmonary complications is emphasized and gas and oxygen and local anæsthetics seem to have practically the same morbidity as ether. Incidentally it is also stated that an "ether eye" after operation is more often due to the pressure of the mask than to ether in the eye. The chapters dealing with bones and joints cover some 600 pages and contain much detail, while Kanavel contributes an excellent description of the diagnosis of infections of the hand.

In Volume II Curtis deals fully with gynæcological diagnosis and Blair has an excellent section on diseases of the face, mouth and jaws. Shelton Horsley contributes a comprehensive account of the diagnosis of diseases of the stomach and duodenum, while Richardson deals with the appendix, small intestine and colon. On the much debated subject of chronic appendicitis the author concludes that this condition represents a clinical diagnosis which cannot be correlated with a definite pathological picture, and that in general the X ray diagnosis should be accepted with caution unless confirmed by the clinical study of the patient. A section by Duff Allen on acute abdominal emergencies is detailed and practical, and a special feature is a description of the various manifestations of abdominal "allergy."

In Volume III is included the sections on diseases of the thorax and of the liver and biliary passages for which Dr. Graham is personally responsible. As might be expected, these are excellent and represent the best account we know of the diagnosis of diseases in these regions. In addition to a full account of the author's researches and a detailed description of cholecystography, the recently introduced methods of estimating hepatic efficiency are outlined. The skull, brain and its membranes are dealt with by Dandy and the spinal cord by Adson. Both of these sections give a detailed account of modern methods.

The whole work is excellently produced, is freely illustrated and in addition to an index at the end of each volume there is a separate small index volume which makes the whole work readily available for reference. There is a bibliography at the end of each chapter for the information of those wishing to refer to the monographs or special articles referred to in the text, and it is gratifying to note that British workers receive generous recognition.

The work can be highly recommended as thoroughly up to date and contains a reliable and comprehensive account of the present state of modern surgical methods of diagnosis.

[1] "Surgical Diagnosis," by American Authors, Edited by Evarts Ambrose Graham, A.B., M.D.; 1930. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little. Volume I, pp. 927; Volume II, pp. 878; Volume III, pp. 1052, with illustrations. Price for three volumes: £7 10s. net.

Notes on Books, Current Journals and New Appliances.

THE CLARITOR: A DEVICE FOR REMOVING OFFENSIVE ODOURS.

A DEVICE known as the "claritor" has been brought to our notice by W. Watson and Sons, Limited. It is an electrical apparatus designed to remove all odours that may arise in the presence of such conditions as gangrene, cancer or burns, or after colostomy, during the puerperium or in urological conditions. It may be placed on the floor or suspended from the framework of a bed.

This device appears to offer many advantages, particularly from the point of view of the comfort of the patients, attendants, nurses and visitors. From the economic standpoint it should also be useful. For example, if the "claritor" is used, it will not be necessary to place the patient in a room by himself on account of the odour emanating from him. The device is not unsightly, is noiseless in operation and the manufacturers claim that it does not require recharging.

MEDICAL AND SURGICAL REPORTS OF THE EPISCOPAL HOSPITAL.

THE sixth volume of the "Medical and Surgical Reports of the Episcopal Hospital," Philadelphia, is to hand.[1] The volume is published in commemoration of the seventy-fifth year of the existence of the hospital. Some special articles reminiscent of the earlier days of the hospital have been included and some articles appearing in medical journals have been reprinted; other articles have been written specially for the volume. Some of the articles reprinted were published eight or nine years ago. The subjects discussed in the volume are many and of diverse interest. Mention may be made of several in which the progress during the last seventy-five years in such subjects as anæsthesia, gall bladder surgery, fractures and ophthalmology, is discussed. The statistics of neurological operations in different periods during the seventy-five years demonstrate the progress made. The book is an interesting record of progress.

[1] "Medical and Surgical Reports of the Episcopal Hospital," Volume VI; 1930. Philadelphia: W. J. Dornan. Royal 8vo., pp. 460, with illustrations.

The Medical Journal of Australia

SATURDAY, JANUARY 24, 1931.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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THE NEXT CONGRESS.

IN the course of a letter written many centuries ago to the Hebrews, Paul of Tarsus used the following words:

> Let us hold fast the profession of our faith without wavering; . . . and let us consider one another to provoke unto love and to good works: not forsaking the assembling of ourselves together, as the manner of some is.

These words had, of course, a special significance when they were used by the writer in question, a significance which need not concern us at present. William Osler applied them in a medical sense and used them as a superscription to his chapter "On the Educational Value of a Medical Society" in his well known book "Aequanimitas." They are singularly appropriate to a consideration of medical congresses. To practise medicine is to make a profession of faith, and faith without works is dead. Moreover, there is no stimulus so provocative of work as the assembling together of persons actuated by similar motives, striving to attain the same goal and determined at all costs to reach it.

The medical profession of Australia is divided by the six States of the Commonwealth into six units and each of these has its own Branch of the British Medical Association. The distances between the centres of Branch activity are considerable and those on the outskirts necessarily find it more difficult to make contact with members of other Branches. The links binding the Branches are the Federal Committee of the British Medical Association in Australia and THE MEDICAL JOURNAL OF AUSTRALIA, and opportunities for intercourse are provided every three years by the Australasian Medical Congress (British Medical Association). As has already been pointed out in these pages, the new Federal Council will tighten the bonds between the Branches and make for a more homogeneous body. This will result in more satisfactory and uniform control of the activities of the Branches and possibly the Australasian Medical Congress may assume a character more comparable to that of the annual meeting of the parent body in England. This would be most desirable. In the meantime the congress in its present form must remain the main meeting ground for the exchange of views on scientific subjects and the main source of inspiration for concerted effort.

The first three sessions of the Australasian Medical Congress (British Medical Association) have been most successful. It is a matter for sincere congratulation that the Federal Committee has accepted the invitation of the Western Australian Branch and has decided that the fourth session is to be held in Perth. The date has been fixed for some time in October, 1932. Dr. D. D. Paton has been appointed President and Dr. L. E. Le Souef and Dr. J. P. Ainsley Joint Honorary Secretaries. The members of the Western Australian Branch have determined that the fourth session is to be a success and have appointed themselves as a general committee of congress to that end. It rests with the members of the other Branches as to whether they will achieve their object.

In appealing to members of the British Medical Association to make up their minds at this early stage to attend the congress in Perth, we do not intend to enlarge upon the many advantages associated with such a gathering. That may be left for another occasion. Emphasis has been laid on the congress stimulus and this alone should make sufficient appeal. It may possibly be urged that the journey to Perth from other States is a long

one. It has not been too long a journey for Western Australian representatives to undertake when a congress was held in Melbourne, Dunedin or Sydney. Western Australia has a wealth of clinical material and has its own problems of preventive and clinical medicine. Both will be placed before members of the next congress. All medical practitioners need a holiday at regular intervals and most of them plan their holidays a long time in advance. Members are urged to plan their holiday period for October, 1932. The journey to Perth will provide change and relaxation and the congress week will be an intellectual refreshment. Perth is one of the prettiest cities in the Commonwealth; its surroundings are delightful and its people noted for their hospitality and good will. Now is the time to make the decision. In October, 1932, will come the public profession of faith.

Current Comment.

BLACK DISEASE OF SHEEP.

In November, 1930, Penfold and Parker reported in this journal the results of some work carried out by them on immunity against *Bacillus œdematiens*. They discussed black disease in sheep and showed that an efficient active immunity can be safely produced in guinea-pigs and sheep by a single dose of a vaccine described by them. They suggested that their work should be repeated in the monkey with a view to its application to man. In the course of their article Penfold and Parker referred to work by A. W. Turner on *Bacillus œdematiens*. Turner has been carrying on his investigations on behalf of the Council for Scientific and Industrial Research of the Commonwealth and has published a most important monograph on the subject of black disease of sheep (infectious necrotic hepatitis).[1]

In this monograph Turner has dealt with the history of black disease, its symptoms, pathological changes, the causal organism and its toxin, and the question of immunity. He has shown that black disease, or as it should be called, infective necrotic hepatitis, is the result of an "unholy alliance" between an animal parasite, the liver fluke, *Fasciola hepatica*, and a vegetable parasite, the *Bacillus œdematiens*. He has also discussed the methods by which the disease may be controlled and possibly eradicated from flocks. Turner's work represents research of the first order. Bacteriologists will study the monograph in its entirety; the immunological aspect has been discussed in a thorough and complete fashion. From the standpoint of human medicine the work is important from the bacteriological and immunological points of view, and medical practitioners, as scientifically minded members of the community, will view with great satisfaction the elucidation of a pathological process which has been estimated to cost the Commonwealth annually upwards of a million pounds sterling.

In the space available it will be impossible to review every aspect of Turner's work. It must suffice if one or two points only are touched upon. In the first place, in regard to the comparison of human strains of *Bacillus œdematiens* with those producing the hepatic disease in sheep, Turner concludes that there is no very great difference between the human and ovine strains of the organism, except size and perhaps the fermentation of glycerine. He thinks that the former may be due to the influence of the ovine body on the bacillus and adds that apparently size is a factor of no great specific importance and may vary with the environment. Since the active immunization of animals with vaccines has been found of practical benefit (Turner gives full details of findings in this regard), it would probably be beneficial if applied to human beings. This, of course, is Penfold's and Parker's suggestion.

In regard to the pathogenesis of black disease, Turner points out that Dodd in 1922 was the first to notice the close association between the presence of immature wandering liver flukes in the liver and the occurrence of black disease. Association of factors, of course, was not sufficient and it was necessary to prove interaction of the factors. Turner states that in 1928 "we" showed that after intravenous or intratracheal injection of toxin-free spores rabbits became carriers of latent spores in the liver, spleen and bone marrow. (It is not clear who "we" refers to; in the list of references at the end of the monograph the only communication for 1928 bearing Turner's name bears his alone and no other as that of an associate.) On the assumption that such a state of latency exists in nature and that sheep on infected pastures absorb spores into their bodies by some means, the suggestion was advanced that black disease is brought about by the germination in a *locus minoris resistentiæ*, caused by wandering flukes of spores of *Bacillus œdematiens* that are already in the liver in a latent state. This would be a kataphylactic phenomenon. For a discussion on the subject of kataphylaxis readers are referred to THE MEDICAL JOURNAL OF AUSTRALIA of June 28, 1930. Turner carried out experiments on the latency of spores of *Bacillus œdematiens* in the animal body. He found that when spores are injected into animals by the intravenous, intracardiac, subcutaneous, intramuscular, intraperitoneal, intratracheal or intrapulmonary route or when they are fed to rabbits with or without tooth extraction, or to sheep without tooth extraction, they may be carried to various parts of the body where they assume a

[1] "Black Disease (Infectious Necrotic Hepatitis) of Sheep in Australia," by A. W. Turner, Council for Scientific and Industrial Research, Commonwealth of Australia, Bulletin Number 46, 1930.

latent life. Latency is observed longest and in the most typical form in the liver, spleen and bone marrow, the bone marrow being of secondary importance. Since ingestion is the most obvious and most natural method of infection, Turner (his "we" must be ignored) accepts it as the most usual method of infection in nature. He has no information to impart as to the segment of the alimentary tract in which spores enter the body, but points out that the possible influence of parasitic infestation is considered as a factor. As against this he states that he has never seen black disease in an animal heavily infested with stomach and intestinal parasites.

Experimenting further, Turner found that a fatal infection strongly resembling black disease can be reproduced in rabbits by using a tissue-irritant calcium ion to initiate the process. Also by wandering cysticerci he produced in the livers of rabbits harbouring latent spores of *Bacillus œdematiens*, an infection essentially similar to that produced experimentally by wandering liver flukes. Finally, he produced black disease in guinea-pigs by giving them intraperitoneal injections of toxin-free spores and infesting them with *Fasciola hepatica*.

There can be no doubt that Turner has explained the manner in which black disease arises in sheep. Some minor aspects of the condition are perhaps not quite clear, but the main facts may be taken as proven. Our one regret is that we cannot go more fully into the work. A whole chapter could, for example, be written about the prophylactic and therapeutic measures suggested by Turner and shown by him to be effective. If Turner has done nothing else, he has shown the value to the community of a body like the Council for Scientific and Industrial Research—he has given a check to those who would curtail the activities of the Council on account of difficulty of finding money for their continuance.

RAMISECTION IN SPASTIC PARALYSIS.

IN THE MEDICAL JOURNAL OF AUSTRALIA of October 11, 1930, reference was made in a leading article to a report published in *The Lancet* in regard to the value of ramisection in spastic paralysis. The report was signed by ten medical practitioners and was based on observations made on six children who had been subjected, some considerable time previously, to the operation of ramisection by N. D. Royle. The most sweeping conclusion in the report was to the effect that the operation has "no place of value in the treatment of spastic weakness."

N. D. Royle has replied to this report.[1] He claims that the report is full of inaccuracies, and in support of his contention discusses each of the six cases briefly. He points out that two of the patients had athetosis. Since these patients were operated on he has discovered that his old operation of sympathetic ramisection is not a suitable procedure when athetosis is present. The operation that should be used is the new operation of trunk section. A patient who could not walk before operation, subsequently was able to walk. Royle ascribes her subsequent retrogression to the progressive cerebral sclerosis associated with encephalitis; he states, and rightly, that this does not justify the statement that no improvement appeared. Another patient could not run; he could not use his hand. The day after operation he had voluntary control of the hand and yet (states Royle) this result was attributed to reeducation. Two months after operation the patient could run. Royle has never seen such results from reeducation. In regard to another patient Royle claims that improvements noted by him are not mentioned in the report. Another patient, unable to walk, walked unaided three weeks after ramisection. The English committee ascribes the improvement to lengthening of the *tendo Achillis*. Royle found that severe double *talipes calcaneo-valgus* had followed the lengthening of the tendon and describes the result as a calamity.

Royle asks a pertinent question when he wants to know whether, as the report of the committee certainly suggested, a patient may be regarded as suffering from surgical shock seven years after operation. Royle's reply will be convincing to those who have had experience of the operation of ramisection; it will probably not convince the English sceptics. We still hold the view that a special committee should be asked by the College of Surgeons of Australasia to investigate the question on the lines laid down in the leading article previously mentioned.

[1] *The Lancet*, November 29, 1930.

THROMBOSIS AND EMBOLISM.

AN interesting study has been made of the incidence of thrombosis and embolism in one thousand consecutive *post mortem* examinations by S. R. Rosenthal.[1] He found 134 cases of thrombosis, 76 of embolism and two of fatal lung embolism. Expressed in percentages, these are 13·4%, 7·6% and 0·2%. The percentages in the literature quoted by Rosenthal were 17·7, 12·5 and 0·9. It may be noted that in a series of one thousand autopsies reported in this journal by Cleland massive pulmonary embolism had caused fourteen of the deaths. In Rosenthal's series infections and inflammatory diseases played a minor rôle in causation. Of the thrombi associated with infections or suppurations 76% were remote from the site of infection. He shows that stasis alone or in association with endothelial injury will not result in formation of thrombi; alterations in the blood are prerequisite. Rosenthal concludes that thrombus and embolus formation is dependent on a colloidal, chemical or physical alteration in the blood in association with (in order of importance) heart and vascular changes and infective processes.

[1] *The Journal of Laboratory and Clinical Medicine*, November, 1930.

Abstracts from Current Medical Literature.

RADIOLOGY.

Cross Infection of the Lung.

L. G. COLE, R. W. MORSE, R. E. POUND, C. L. HEADLAND AND W. G. COLE (*Radiology*, December, 1930) in an article on the site of predilection in cross infection from the right to the left lung state that infections of the right lung not infrequently give rise to infection of the opposite lung, a process which they term "cross infection." It is an autogenous infection due apparently to inhalation of exudate. A cross infection may occur in any part of the left lung, but there is such a tendency for it to occur in a local region comprising about a fourth of the lung, midway between the base and apex, that this can be considered the site of predilection. This area, in ordinary skiagrams, lies between the second and fifth ribs. Cross infection has been observed most frequently in the presence of a breaking down or cavitation of a caseous or tuberculous lesion. Many cases are cited illustrating cross infection and many skiagrams are printed, after which the authors state in a summary that cross infection from right to left lung is apparently quite frequent in the presence of destructive infections, and again insist on a site of predilection in the middle of the left lung. Cross infection is apparently due to aspiration of infectious exudate and detritus present in the bronchial tree. Viscous material from some other part of the lungs may be aspirated into the parenchyma of this site of predilection. The site of predilection is apparently in the path of least resistance beyond the termination of the left main bronchus. Posture of the individual may be a factor in cross infection, but it seems probable that the sharp intake of breath following a prolonged cough is a more important factor. Prognosis in any given case does not depend entirely upon the progress of the original area, but must take into consideration secondary infections in other parts of the lung.

Spondylitis Traumatica Tarda.

EDWARD S. BLAINE (*Radiology*, November, 1930) describes *spondylitis traumatica tarda* (Kummell's disease). The condition was first described by Kummell in 1891; other terms for the condition are post-traumatic spondylitis and post-traumatic vertebral collapse. The X ray study reveals varying degrees of loss of bone substance of a vertebral body at different periods of time, following injuries which may range from slight to major proportions, but without actual gross compression fracture. The disease has been discovered with greater frequency since so many films are being taken in the lateral projection. Three stages of the development of the lesion may be described. First, there is the actual injury, often of minor degree, with no evidence of fractured vertebra. Secondly, there is a period of no complaint of pain and, thirdly, after several weeks, months or years there is a gradual development of back pain, and in some cases a moderate prominence on the spine. At this time X ray study discloses an altered vertebra, partly collapsed. Kummell regards the injury as having occurred to the trophic factors with the result that the bone tissue becomes more or less devitalized and unable to withstand normal pressure. The vertebræ most frequently involved are those from the fourth to the seventh. There is often no recollection on the part of the patient of severe back injury, but in other cases there is history of slight trauma, consisting of a more or less severe squeezing force to the upper and lower parts of the patient's body by hyperflexion. The decrease in bone volume as seen by X rays is greater anteriorly than posteriorly, when it resembles the changes of tuberculous spondylitis, or the decrease may be more uniform, in which case no gibbus results. Pathological studies of the lesion are reported as showing the presence of numerous hæmatomata in the vertebral body with rarefaction of the bone tissue, whilst in later cases there is complete breakdown of the bony structure. The striking feature of the condition is the surprisingly small degree of disability which results. The principal lesion to be differentiated from Kummell's disease is tuberculous spondylitis in which there are suppuration, necrosis and much more pronounced gibbus. The tuberculous condition is vastly more painful. In *spondylosa rhizomelica* there is a general settling of all the vertebral bodies. In post-typhoid spine there are usually hypertrophic repair changes and destruction of an intervertebral disc. Malignant disease, syphilis and osteomalacia are not usually confused with the condition.

Intravenous Pyelography.

A. VON LICHTENBERG (*Radiology*, December, 1930) describes intravenous pyelography. Two methods of showing contrast material in the urinary organs are used: Instrumental pyelography by injection and excretion pyelography in which use is made of renal function. Intravenous pyelography is developing rapidly now that reliable means have become available. The author gives a history of the process from the first experiments by Völcker and himself in 1905. Intravenous pyelography can be perfected only if one has a non-toxic product that can be excreted by the kidneys in sufficient concentration to assure visualization of the urinary tract with certainty. The medium which has been selected is 5-iodin-pyridin-N-acetic acid sodium, a compound later called "Uroselectan." The preparation meets all the requirements. It is quickly excreted, highly concentrated, gives good shadows and produces no injurious after effects. Its use is of threefold value: (i) It affords visualization of the tract with special reference to its system pathology and physiology; (ii) it affords knowledge of the renal function; (iii) it affords an insight into the dynamics of the urinary tract by permitting the examiner to observe the expulsion of the medium through the tract. A diagnostic film can be obtained only when renal function is present. Severe bilateral infections give no shadows or only faint or considerably delayed shadows. Where damage to the kidneys exists, the intensity of the shadows is diminished. In blocked conditions one frequently obtains very clearly defined shadows, owing to the concentration of "Uroselectan." The authors state that simple disturbances of renal function are not perceptible by this method and though testing of function by pictorial means is not an exact method, it suffices for the gross clinical diagnosis of surgical lesions. Localization of the infection is possible in one-sided conditions. Damaged glomeruli give bad or no shadows at all. On the other hand, clean obstructions, even in far advanced stages will give good shadows. To perfect the Röntgen ray examination of the urinary organs would mean that intravenous pyelography could be of use when cystoscopy fails or presents difficulties, or when instrumental pyelography is not applicable or could not be carried out, for example, in cases of stricture, severe bladder affections, hæmorrhage, fistula and in small children. In the following instances intravenous pyelography is indicated from the standpoint of a clinician: (i) When cystoscopy cannot be performed, (ii) when ureteral obstruction prevents the passage of contrast medium past the obstruction, (iii) when instrumental pyelography means risk to the patient or when the patient wishes to be spared the pain of catheterization.

Cholecystography.

MORRIS FELDMAN (*Radiology*, December, 1930) gives an analysis of five hundred cases of cholecystography after oral administration of the dye. He states that the method has made possible the diagnosis of many obscure gall bladder conditions. It furnishes not only the means of ascertaining the functional activity of the gall bladder, but presents a relatively accurate anatomical picture. The method is not infallible and should be considered together with the clinical data. The results obtained by the oral and intravenous methods differ only to a very slight degree. Normally the gall bladder shadow is of even density, varying in different individuals. It is homogeneous and regular in outline. There is a wide latitude in what is termed normal density. A shadow of lessened density, which is clearly outlined and homogeneous and contracting normally, must be considered normal, while a persistent faint shadow, fading off into the other organs, must be looked upon as abnormal. The contraction of the gall

bladder in one or two hours following a fatty meal is an important test of its function. The author states that there are practically no contraindications to the use of the oral method. Jaundice is not a contraindication and in pregnancy the dye produces no ill effect upon either the fœtus or the mother. In 500 cases 287 examinations revealed abnormal findings. Eighty-six patients came to operation and in 81 instances (92%) the diagnosis was proved to be correct. The few errors which do occur are usually found with poorly filled gall bladders and in those giving normal appearances. Jaundice occurred in twelve patients and in every instance the gall bladder failed to fill. Vomiting occurred in 16%, but apparently made no difference to the result of the test.

PHYSICAL THERAPY.

Angina Pectoris.

MARCY L. SUSSMANN (*American Journal of Roentgenology and Radium Therapy*, August, 1930) states the Röntgen treatment of *angina pectoris* at the Massachusetts General Hospital was suggested by the recent work of Mixter and White who inject the stellate and upper dorsal sympathetic ganglia with alcohol. This work is based on the theory that the pain of *angina pectoris* is transmitted through *rami communicantes* to the spinal nerve roots and that the greater part of these painful senesations are transmitted through the upper dorsal roots. Swetlow believes that the somatic representation of anginal pain on the surface of the body indicates the roots through which these painful sensations pass. Holmes, therefore, suggested the possibility of influencing these ganglia by Röntgen radiation, in the hope of achieving the good results obtained by injection or sympathectomy without the disadvantage of an operative procedure. In a summary the author states that the literature on the treatment of *angina pectoris* by Röntgen radiation is reviewed. A possible mechanism for the relief of pain is considered. The literature on the effect of Röntgen radiation on the nervous system, particularly as it relates to its analgesic action is reviewed. Experiments on the effect of Röntgen radiation on the sympathetic nervous system are reported. A preliminary report is made on the treatment in this clinic by paravertebral irradiation of sixteen patients suffering from *angina pectoris*. Six were almost completely relieved, five moderately improved, one has died, four have not yet returned for observation.

Cancer and Radium in South India.

E. W. C. BRADFIELD (*Indian Medical Gazette*, August, 1930) discusses the prevalence of cancer in South India and its treatment by means of radium. During the year 1929, 411 patients suffering from malignant disease were admitted to the General Hospital, Madras. Of these 367 suffered from carcinoma. Many of these patients were no doubt attracted to the hospital by the knowledge that radium was available there. Previously it was thought that cancer of the breast was uncommon in South India, but this belief has been upset during the past year. There appears to be a tendency on the part of women to hide this disease. The incidence of malignant disease in South India actually is very much the same as in other parts of the world. It has been very difficult to keep in touch with the patients, but so far results of treatment by means of radium have not been discouraging. The best results are obtained in the treatment of cancer of the breast, the tongue and the floor of the mouth. Operations for the relief of malignant disease of the tongue have now been abandoned at the Madras General Hospital. The case of a patient suffering from adenocarcinoma of the meninges is worth recording. This patient had been operated upon for what had appeared to be a sebaceous cyst of the scalp, but which actually was an adenocarcinoma which had eroded the scalp in the frontal region. Alarming hæmorrhage was arrested only by use of the actual cautery. The application of radium in a total dosage of 9,648 milligramme-hours was followed by remarkable results, and six weeks after cessation of treatment the growth seemed to be "melting away." Bradfield has seen very few patients cured of cancer of the cheek by operation in South India, and he remarks that this condition remains the greatest problem, but he has hopes that if it can be attacked sufficiently early its treatment by application of radium holds out good prospects of success. Though it is often of slow growth, cancer of the cheek, once it has invaded the muscle, spreads far and insidiously. It is this area of muscle invasion which appears to be so difficult to attack by means of radium. Bradfield advocates the application of small doses of radium over long periods rather than the briefer application of larger doses, which are apt to cause necrosis. Superficial necrosis of the jaw is always a possible danger which must be risked.

Radiotherapy in Pertussis.

E. RADU AND S. ACKERMAN (*Le Journal de Radiologie et d'Electrologie*, October, 1930) claim excellent results in the radiation treatment of pertussis. Their technique is as follows: Two courses of irradiation are given at intervals of seven or eight days. A dose of five Holtzknecht units is given through three millimetres of aluminium with a kilovoltage of 120 to 130, four milliampères of current passing through the tube at a distance of sixty centimetres. The whole of the thorax is irradiated. The central beam passes through the middle of the body of the sternum. Both anterior and posterior surfaces of the chest are subjected to X ray treatment. The authors state that after the first dose the spasmodic coughing becomes more frequent and more severe a few hours later. However, on the following day the spasms become less frequent and may even disappear during the night. They return during the day time for three to six days, after which the coughing disappears completely. Treatment is given only during the third or fourth week of the disease, usually after all other therapeutic means have been exhausted. The authors hold that the radiation acts probably on the nervous system.

Radiation and Arthritis.

IRA I. KAPLEN (*Radiology*, December, 1930) states that radiation therapy has been used with beneficial results in inflammatory lesions and has proved very efficacious for tuberculous joint conditions. The patients referred were those with acutely swollen and very painful joints. The result of treatment with radiation could be readily noted, the sedative effect usually occurring within twenty-four hours. When relief was obtained the results were gratifying and fully justified the further use of this form of therapy. During the past year the author has treated 68 patients (62 males and six females); of these 26 complained of single joint involvement and 42 of involvement of more than one joint. Of these patients 52 had received treatment before being submitted to radiation. The joint most frequently involved was the knee. In 37 the knee alone was involved and in four the elbow alone. The oldest patient was fifty-three years of age and the youngest seventeen. When multiple lesions were present, three areas were treated at one session. In seventeen instances only one treatment was given to relieve the condition. The technique used was high voltage X rays with filtration of 0·5 millimetres of copper and one millimetre of aluminium. The target distance was usually thirty centimetres and the size of the field treated nine by twelve centimetres. Most frequently 25% of the skin erythema dose was given to each area, but when multiple lesions were treated at one session a 20% dose of the skin erythema on each area was administered. While most patients reacted well to the first treatment, several received two or more subsequent treatments before complete relief was obtained. The knee and elbow involvement reacted more quickly than did the lesions of the smaller joints. While X rays used therapeutically are not suggested by the author as a panacea in joint diseases, in acute and refractive gonorrhœal arthritis they have proved quite efficacious in relieving the acute symptoms of the lesion and not infrequently in bringing about permanent relief. The results occur early. Radiation therapy may be used either alone or in conjunction with the usual methods of treatment. There are no contraindications to the use of this form of therapy.

Special Articles on Diagnosis.

(Contributed by Request.)

XXIX.

TUBERCULOSIS OF THE SPINE.

Of the many forms of bone tuberculosis that of the spine is the most common, requires the longest time for its treatment and produces the most serious disabilities. The earlier efficient treatment is instituted, other things being equal, the more favourable the prognosis; consequently the importance of early diagnosis. The symptoms common to all forms of tuberculosis of bone generally are pain and loss of normal movement; the signs are heat, tenderness, swelling, muscular spasm and atrophy. These are modified according to the particular parts affected.

In the spine the site of the lesion is almost always in the bodies of the vertebræ, either central, in the anterior part, or in the region of the epiphyseal plates which lie on their upper and lower surfaces. This being far from the skin surface, the local signs of swelling and heat are indetectable. Between the individual vertebræ, save the first two cervical, there is little movement and very little synovial membrane, so that loss of normal movement and pain on passive motion are not so readily detectable as when tuberculosis attacks the bones of the freely movable joints. Tenderness on pressure, moreover, is frequently absent and muscular atrophy cannot be detected. The difficulty of diagnosis is added to by the fact that while in the region of 90% of all cases occur in children under fifteen years of age, 60% are found in children under five years, and in the latter little help can be expected from the history. As an indication of the insidious onset of the disease it may be mentioned that in the histories of over fifty patients treated at the Melbourne Children's Hospital, in 23% the first indication to the parents of disease was the appearance either of kyphosis or a cold abscess externally. This no doubt reflects somewhat on the intelligence and solicitude of the parents. On the other hand, kyphosis sometimes appears suddenly even in older children. However, in the majority of instances early diagnosis is not difficult, and in this article it will be unprofitable to consider aught but early diagnosis.

Clinical Features.

What are the clinical features that will lead to diagnosis?

The most frequent initial symptom is pain in the back (noted in about 70% of cases); sometimes stiffness, which may be associated with pain, is the first evidence (35% of cases). Small children may give evidence of these symptoms by a disinclination to run about or sit up at meals or by supporting the chin in the hands or the trunk by the hands on the thighs. Sometimes the onset is more indefinite, with a general falling off of spirits and activity before more definite and localizing symptoms appear.

The pain in a certain number of instances is abdominal or femoral, and the old precept may well be repeated that in all cases of chronic abdominal pain one should examine the spine. Once one suspects disease of the spine, the most important step has been taken and though it may take some time to verify the suspicion, not very many cases will be missed.

The patient must be stripped for examination. A general inspection is made for deformity of the spine, abnormal swellings or tender spinous processes. Muscular rigidity is the most important diagnostic sign and the greater part of an examination is aimed at its detection. The movements necessary to demonstrate it depend on the section of the spine to be investigated. In the lumbar spine the chief movement is dorsal extension; in the thoracic, rotation and lateral bending; in the cervical all movements except rotation, which is possible to any degree only between the first and second vertebræ. First of all the patient is told to stoop down and pick up something from the floor, with the knees held straight, while the observer stands at his side. Stiffness, alteration of the normal convexity of the spine or pain or disability on rising may then be noticed. Then lay him on his face and, grasping him by the ankles, or, if he is too heavy, with the forearm, just above the patellæ, hyperextend the spine as far as possible. This specially tests for lumbar spine rigidity, but a thoracic lesion may be detected by this manœuvre. Next bend the whole trunk laterally in the same manner in both directions. Then, standing the patient up, test rotatory movement by holding the pelvis still and asking him to twist round and look at you standing behind him, first over one and then the other shoulder. The cervical spine is then put through its movements in all directions. Any departure from the normal range of movement in these manœuvres is evidence of muscular spasm at least and strongly suggests bone disease. However, it is often far from easy to decide definitely that rigidity is present. It is well to test for psoas spasm also by ascertaining if there is any limitation of hyperextension of the thigh when the patient is prone; in the absence of hip disease this is evidence of lumbar spine involvement and probably cold abscess. Following this the abdomen is palpated for psoas abscess. The next step is radiography. In most cases this will confirm the diagnosis, localize the affected vertebræ and give some idea of the extent of the lesion. Photographs are taken in antero-posterior and lateral planes. But it is important to realize that in many cases an early lesion is not detectable by X rays at present. If the clinical picture remains compatible with tuberculosis, it should still be treated as such notwithstanding X ray silence. There is a specimen of tuberculosis of the spine in the Pathology Museum at the Melbourne University, well marked, a skiagram of which, even with the soft tissues absent, barely shows at all a bone destruction which is quite definite. There is also a small boy who has been under observation and treatment for three years for clinically typical cervical spinal tuberculosis, who developed a retro-pharyngeal abscess from which the tubercle bacillus was recovered, and yet innumerable skiagrams have failed to reveal any bony lesion. Such instances are extreme, but it is not at all uncommon for clinical diagnosis to antedate X ray diagnosis. Further help may be obtained from a positive von Pirquet reaction; the younger the patient, the more value to be attached to it. Tuberculin injections in my experience have given very little help.

Before considering the differential diagnosis it may be repeated that in many cases, by the time the practitioner first sees him, the patient will have a definite kyphosis, a cold abscess, or even paraplegia to simplify the task of diagnosis. But even kyphosis does not prove the existence of tuberculosis.

Differential Diagnosis.

The list of conditions in which wrong diagnoses have been made is a long one, but difficulty commonly arises in only a few, which will be mentioned first.

A local injury with the resultant stiffness and tenderness that so frequently persists in the back is perhaps the most common difficulty. Here continued observation with rest, local heat and perhaps X rays will generally show the condition to be transient. If hysteria be added, the problem is increased.

Sometimes an unusual prominence of the spinous processes of the cervico-thoracic boundary may in spare subjects be a cause of worry; in such a case X ray examination should clear it up.

In adults osteo-arthritis may closely mimic tuberculosis; the distribution, however, is usually far more extensive and X ray examination will reveal the characteristic changes.

In children the condition will be accompanied by the other features of Still's disease.

Scoliosis, especially when associated with some congenital deformity of the vertebræ, has often been mistaken for tuberculosis. Though not characteristic of tuberculous spine, some degree of lateral deformity is quite common in the latter. Careful examination of the spinal movements and the use of X rays should serve to make the differentiation.

The spinal source of chronic abdominal pain has been already mentioned. Tuberculosis of the hip may arouse

suspicion of spinal disease by psoas spasm; but it will be found that all other movements of the thigh are diminished; this does not occur in spinal disease. In the presence of a kyphosis a very real difficulty arises in distinguishing tuberculosis from Kummell's (compression fracture) disease, Calvé's and Scheuermann's diseases. In Kummell's disease the symptoms follow a latent period after the injury. In a skiagram are revealed the common wedge-shaped vertebræ of tuberculosis but with intact intervertebral discs. Calvé's and Scheuermann's diseases are in the same class as pseudo-coxalgia (Perthes's-Legg's disease of the hip), being osteochondritides of the vertebræ. Calvé's disease occurs in younger children, Scheuermann's disease is a vertebral epiphysitis and does not appear until puberty. A differential diagnosis can only be made by satisfactory skiagrams. In Calvé's disease the intervertebral discs are intact, but the bodies are irregularly opaque and fragmented and wedge-shaped. In Scheuermann's disease there is a blurring of the epiphyseal plate and intervertebral disc. Perhaps these conditions explain some of our rapid cures of Pott's disease.

Among the occasional diagnostic difficulties are the following: Acute osteomyelitis, rare in this situation, which generally may be distinguished by the acuteness and severity of the symptoms; typhoid and gonorrhœal spine, in which the history should differentiate; and syphilis of the spine, in which X ray examination may reveal more new bone production than is usual in tuberculosis.

The results of treatment and the Wassermann test will furnish further evidence in the differentiation of syphilis, though it should be remembered that a tuberculous spine may occur in a syphilitic patient and *vice versa*. A malignant growth will usually be a secondary growth, and the diagnosis, suspected from the history, may be confirmed by means of X rays. Hydatid disease also will depend on the use of X rays for its diagnosis, particularly in children in whom the Casoni reaction is not always present.

RUPERT M. DOWNES, M.S.,
Honorary Surgeon to the Children's Hospital, Melbourne.

British Medical Association News.

NOMINATIONS AND ELECTIONS.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Ross, Angela Mary, M.B., 1928 (Univ. Sydney), Hill Street, Lithgow.

THE undermentioned has been nominated for election as a member of the Queensland Branch of the British Medical Association:

Thoms, John Allan, M.B., 1927 (Univ. Sydney), Croydon, North Queensland.

Medical Matters in Parliament.

THE VICTORIAN HEALTH BILL.

ON November 18, 1930, the Legislative Council of Victoria went into Committee for the further consideration of the Health Bill.

Consideration was given to the new clause proposed by Colonel Harold Cohen as follows:

> Nothing in this Act or the regulations thereunder shall be construed as requiring proprietors or manufacturers of proprietary foods or drugs which contain no unwholesome added ingredient to disclose their trade formulæ, except in so far as may be required to secure freedom from adulteration or false description.

The Chairman, the Honourable W. H. Edgar, ruled that the proposed new clause as drafted was not technically in order.

Colonel Harold Cohen then proposed the following new clause:

> Neither any provision of the Health Acts or of any regulation made thereunder, or any revocation of any regulation made thereunder shall be construed as requiring the disclosure on any label on or on any package of any proprietary food or drug of any trade formula or of any innocuous ingredient contained therein except in so far as by such Acts or any such regulation may be required to prevent adulteration or false description of such food or drug.

The Chairman ruled that the new clause was in order, as it was within the degree of relevancy which it was the practice of the Committee to accept.

Colonel Harold Cohen referred to Regulation 75 (5) (the existing law), which provides:

> Every package containing a patent or proprietary medicine shall have attached thereto a label in which shall be inserted legibly and prominently, in English or Latin, the names of the drugs therein which have any therapeutic action.

He thought that in putting aside that regulation the Committee would leave in force ample protection for those things which should be protected. Referring to Regulation 75 (5), he expressed the opinion that the small amount of damage done in a few places did not justify so stringent a regulation which would deprive the State of many good proprietary medicines manufactured there. There was a well recognized proprietorial right in proprietary medicines. The disclosure of the formula would deprive the manufacturers of secrets which they were entitled to register for themselves under the Commonwealth law. The large bulk of proprietary medicines manufactured in the State were beneficial and not harmful. There were ample existing safeguards apart from Regulation 75 (5) to deal with anything deleterious or harmful.

The Honourable W. J. Beckett, Minister for Public Health, said that Colonel Harold Cohen had failed to grasp the important fact that if his new clause became part of the law it would completely upset the whole of their health legislation and regulations. Not only would the whole of the provisions of the *Health Act* be upset as far as drugs were concerned, but with respect to foods also. If he thought that the new clause would effect the purpose that its mover thought it would effect, it would not be acceptable to the Government. Most drugs were harmful if taken in the wrong way or in any wrong quantity or by the wrong person. There was no such thing as an innocuous drug. Therefore, the new clause would practically defeat its object. If the new clause were agreed to, they would have to scrap the whole of their regulations relating to infants' foods, because under those regulations they compelled the proprietors of such foods to declare not only the contents of their preparations, but the proportions of all the ingredients.

After further discussion, the Minister said that any whittling away of the provisions of the Act would weaken it in many directions.

The Honourable Dr. J. R. Harris said that the regulation at which the new clause was aimed sought to provide that in connexion with any proprietary medicine there shall be printed the name of any therapeutic drugs contained therein, either in English or in Latin. He failed to understand why the Minister or the Commission of Public Health should want to have that information printed. There were some scientific men on the Commission of Public Health, although, of course, the municipal representatives are not in that category. The scientific men would know the action of a particular medicine on the human being.

The Honourable D. L. McNamara asked whether a doctor's prescription, such as was used in a medical lodge, could not be regarded as public property?

The Honourable Dr. J. R. Harris replied that it was public property if it was written on a label and given out to the general public with every bottle.

The Honourable D. L. McNamara said that the doctors were under a disadvantage. The prescription was known to every chemist.

The Honourable Dr. J. R. Harris said that it was known to every chemist, but it really made no difference to a doctor's practice when he wrote a prescription for a patient. What was being asked for in the new clause related to a matter of law which no Minister had been game to put into effect. If the honourable gentleman had done so he had done it unjustly, because no matter who was getting a living out of the trade—and the making up of proprietary medicines constituted a trade—he should not be compelled to show the formula on every bottle.

He had been a medical man almost all his life. He had engaged in practice for about thirty-six years, during which time he saw a great deal of the ills of humanity. He had practised against the quacks and against proprietary medicines, and he knew that proprietary medicines had been largely used. Really the treatment of the ills of humanity was very largely a question of faith.

The Honourable H. I. Cohen asked Dr. Harris not to give the show away.

The Honourable Dr. J. R. Harris said that he was not giving the show away, but a proprietary medicine in which an individual believed did a great deal of good. A doctor who was believed in did a very great deal of good. A medicine prescribed by a doctor in whom a patient had faith did a great deal more good to that patient than if he had little or no faith in the medical man.

The Honourable A. E. Chandler said that it all depended on the faith of the patient.

The Honourable Dr. J. R. Harris said that it did not depend altogether on the faith of the patient. He had had hundreds of patients who had been all over the country and had been attended to by quite reputable medical men. It was left to him to impress those people, and to effect an improvement in their health where other medical men had failed. What he wished honourable members to remember was that proprietary medicines frequently did good to a patient who had been to, say, twenty medical men and apparently received no benefit. Some one told such a person of a certain proprietary medicine, the patient obtained and took it, believed in it, and it did him good. It was a fact that they met large numbers of cases in which the persons concerned said that they went to so-and-so and then they took so-and-so and it did them good. To that extent anything was good in the community which would assist people when they were in trouble, whether it were mental, bodily, or imaginary trouble. If imagination was making an individual ineffective, and one had something that would make him effective, then by giving that something one was helping a little. Although proprietors of proprietary medicines made tremendous fortunes out of people, nevertheless, if they had succeeded in benefiting only ten, well and good. The angels said that Gomorrah would have been saved for ten's sake.

The Honourable W. J. Beckett said that that was a figure of speech.

The Honourable Dr. J. R. Harris said that it was and he wanted it to apply to proprietary medicines. The Minister had assisted him.

The Honourable H. I. Cohen agreed with the Minister that the new clause might be going just a trifle too far, because the health of children was a very important matter, and the least thing might have the result of upsetting the health of the child at a delicate stage of its existence. He suggested that Colonel Harold Cohen omit the words "or food" from his new clause so that it would apply to proprietary drugs only.

The Honourable J. P. Jones, Minister for Public Works, hoped that the Committee would not agree with the new clause. He had listened very carefully to the learned doctor, who was unofficial leader in support of the new clause, and, whilst he always placed great reliance on his opinions on the subject of medicine, he must entirely disagree with him on this occasion. While he admitted that there were a great many proprietary medicines valuable to the community, he realized that there were many quack proprietary medicines which were extremely injurious. One of the most serious effects of the proprietary medicine was that it lured the patient into a feeling of security and hope that he would recover, when, as a matter of fact, it often happened, notwithstanding his faith, that in the case of an organic disturbance the medicine had no chance of effecting any beneficial alteration in the patient's condition.

The Honourable H. I. Cohen said that he did not agree with the new clause as proposed by Colonel Harold Cohen. He had drafted the following provision and Colonel Harold Cohen was prepared to accept it.

> Nothing in the Health Acts or in any regulation thereunder shall require the disclosure of any trade formula or of any innocuous ingredient contained in any proprietary drug except in so far as such disclosure may be required to prevent the adulteration or false description of such drug.

The new clause proposed by Colonel Harold Cohen was withdrawn by leave and that proposed by the Honourable H. I. Cohen was carried on division by a majority of fifteen, the ayes being 21 and the noes six.

Medical Practice.

WORKERS' COMPENSATION ACT, 1928 (VICTORIA).[1]

EMPLOYERS or Government departments are liable for accidents to their employees who are in receipt of a salary of less than £360 a year. This does not apply to casual workers.

It is obligatory on an employer to obtain a policy of accident insurance for the full amount of his liability to pay compensation under the Act to any worker. The penalty for failure to do so is £2.

The employer may contract himself out of his liability by the substitution of an approved insurance company.

The employer is not liable if the worker is disabled for less than a week from earning full wages.

A certifying medical practitioner is one who has been appointed as such by the Governor in Council or is acting as such under the *Factories and Shops Act* 1928.

Where a worker has given notice of an accident he shall, if so required by the employer, submit himself at reasonable hours for examination by a duly qualified medical practitioner provided by and paid by the employer.

Any worker receiving weekly payments under this Act shall, if so required by the employer, from time to time submit himself for examination at prescribed intervals by a duly qualified medical practitioner provided and paid by the employer.

Where an application is made to a certifying medical practitioner by a worker who is over the age of sixty or is suffering from any mental or physical infirmity, the certifying medical practitioner shall after examination, if he is so satisfied, give a certificate in the prescribed form to the effect that the age of the worker or some mental or physical infirmity or incapacity from which he is suffering is such as to render him especially liable to accident or render the result of an accident to him especially serious. Fee is two shillings and sixpence, payable by the worker.

Where a worker has submitted himself for examination by a medical practitioner and there is no agreement come to between the employer and worker as to the worker's condition or fitness for employment, the Registrar of a County Court may refer the matter to a referee, whose certificate shall be conclusive evidence as to the matters so certified.

Where a worker applies to a certifying medical practitioner for a "certificate of disablement," the certifying medical practitioner, on payment of the prescribed fee,

[1] The information contained herein has been supplied on request by the Honorary Secretary of the Victorian Branch of the British Medical Association.

shall either proceed at once to make a medical examination of the worker or shall appoint a time and place.

Where a certifying medical practitioner certifies that the worker is suffering from a scheduled disease, for example, anthrax, lead poisoning *et cetera*, and is thereby disabled from earning full wages or that the death of a worker is caused by any such disease and the disease is due to the nature of any employment in which the worker was employed within twelve months previous to disablement, the worker shall be entitled to compensation.

If a certifying medical officer refuses to give a certificate the matter may be referred to a medical referee by the Registrar of the County Court. The medical referees are appointed by the Governor-in-Council and the remuneration is subject to regulations of the Governor-in-Council.

A "certificate of disablement" is one stating that the worker is suffering from a scheduled disease, for example, anthrax *et cetera*, and is thereby disabled from earning full wages at the work at which he was employed. The certifying medical officer shall give his certificate to the worker, and the certificate shall be in the prescribed form, and he should at the same time state whether or not the disease was due to the employment of the worker. The fee for such certificate shall be ten shillings and sixpence and mileage two shillings and sixpence per mile, and shall be paid by the worker.

Where the employer applies for a certificate that the disease contracted is not due to the nature of the employment the fee is ten shillings and sixpence.

A copy of the certificate given should be retained by the certifying medical practitioner and copies of this certificate shall be supplied to the worker or the employer when requested; fee two shillings and sixpence.

For any certificate of disablement by accident given by a medical practitioner where compensation is limited under circumstances set out in Schedule 2 of the Act, the fee shall be seven shillings and sixpence; mileage, two shillings and sixpence per mile after the first mile up to three miles and five shillings per mile beyond. This fee is payable by the employer.

Schedule 2 of the Act sets out the scale and conditions of compensation. It determines how much compensation is payable in respect to injuries received at work.

A judge of the County Court or a police magistrate may summon a medical referee to sit with him as assessor. The fee shall be £3 3s. and there may be paid such further sum as the judge or magistrate may decide, subject to the sanction of the Chief Secretary or Minister administering the Act. The mileage fee is five shillings per mile beyond two up to ten and one shilling thereafter.

All certificates signed by a medical practitioner must be in the form prescribed by the regulations.

The Medical Referee shall send to the Chief Secretary's Office at the end of each quarter a statement of fees due to him. The fee for a first reference is £2 2s. and mileage five shillings a mile beyond two up to ten and one shilling and sixpence thereafter. For a second reference the fee is £1 1s. Where the worker ceases to reside in Victoria and the medical referee certifies that his injury is likely to be permanent, the fee is £1 1s. only. The medical referee may apply to the Chief Secretary for special expert assistance.

University Intelligence.

THE UNIVERSITY OF MELBOURNE.

AMONG the matters recently dealt with by the Council of the University of Melbourne is the revision of the regulation for the degree of Doctor of Medicine. The regulation has been made on lines similar to those recently reported for the degree of Master of Surgery (M.S.). In future the M.D. degree will depend on an examination which is divided into two parts, the first dealing with physiology and pathology, including immunology, and the second dealing with general medicine, including medical ophthalmology and the history of medicine. Under the old regulation there was one examination only, with one compulsory subject, medicine, and several optional subjects, one of which had to be taken by each candidate. Candidates may still submit theses which, if satisfactory, may excuse them from such part of the written examination as the Faculty may determine. There is still a provision that the degree may be granted on a thesis alone, but it is not intended that this should be operative unless in entirely exceptional cases.

With the limitation of the M.D. degree to the general subject of medicine, three new diplomas have been established, namely, those of ophthalmology, of laryngology and otology, and of gynæcology and obstetrics. Each of these is on similar lines; the examination is divided into two parts, the first concerned principally with anatomy and physiology and the second with the special subjects of the diploma. Special courses of instruction, either at the University for Part I of the examination, or partly at recognized hospitals and partly at the University for Part II of the examination, must be fulfilled.

The arrangements for instruction for the primary examination for the Fellowship of the Royal College of Surgeons of England have been considered. As arrangements for part of the necessary instruction had already been made by the Melbourne Permanent Committee for Post-Graduate Work, the Council concurred in those arrangements for 1931. It proposes, however, that the necessary teaching after 1931 should be undertaken by the University and it referred the matter to the Faculty of Medicine for consideration and report.

Dr. J. B. Turner has been appointed Stewart Lecturer in Anatomy; Dr. Henry Searby has been appointed Stewart Scholar in Surgery and Dr. K. B. Fairley Stewart Scholar in Medicine.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of the *Medical Act*, 1912 and 1915, as duly qualified medical practitioners:

England, Clarence William, M.B., B.S., 1925 (Univ. Adelaide), Olphert Avenue, Vaucluse.

Forbes, Brucklay Robertson Vincent, M.B., Ch.M., 1926 (Univ. Sydney), Federal Health Office, Customs House, Sydney.

Hogg, James Edgar Phipps, M.B., B.S., 1930 (Univ. Sydney), General Hospital, Brisbane.

Middleton, Frederick Charles, M.B., B.S., 1926 (Univ. Melbourne), Wilcannia.

Pittar, Cecil Arthur, M.B., B.S., 1930 (Univ. Sydney), General Hospital, Brisbane.

Rae, David Ernest, M.B., Ch.B., 1908 (Aberdeen), 62, Margaret Street, Petersham.

Read, John Richard Major, M.B., Ch.B., 1929 (Edinburgh), 15, Mirimar Flats, New South Head Road, Rose Bay.

Schafer, David Paul Hannaford, M.R.C.S., 1927 (England), L.R.C.P., 1927 (London), M.B., B.S., 1930 (Univ. Melbourne), Burren Junction.

Tyrer, Thomas Longton, M.B., B.S., 1926 (Univ. Melbourne), Prince of Wales Hospital, Randwick.

Walker, Eric Lorimer, M.B., B.S., 1930 (Univ. Sydney), General Hospital, Brisbane.

Additional diplomas:

Brodziak, Innes Albert, M.R.C.P., 1930 (London).

VICTORIA.

THE undermentioned have been registered under the provisions of the *Medical Act*, 1928, as duly qualified medical practitioners:

Appleby, Harold Henry, M.B., B.S., 1925 (Univ. Adelaide), c.o. Mr. S. Pearson, Grenville Street South, Ballarat.

Phillips, John Richard, M.B., Ch.M., 1925 (Univ. Sydney), Hargreaves Street, Bendigo.

QUEENSLAND.

THE undermentioned have been registered under the provisions of *The Medical Act of* 1925 as duly qualified medical practitioners:

Kennedy, Richard Thomas, M.B., B.S., 1929 (Univ. Sydney), Maryborough.
Appel, Godfrey Hugh, M.B., B.S., 1928 (Univ. Sydney), Toowoomba.
Spencer, William Morton, M.B., Ch.M., 1926 (Univ. Sydney), Innisfail.

Restoration to Register:

Meade, Frampton Garnsey, M.B., Ch.B., 1913 (Univ. Melbourne), Brisbane.

Additional diploma:

Meade, Frampton Garnsey, M.D., 1922 (Univ. Melbourne).

Obituary.

KEITH MORISON GARRETT.

WE regret to announce the death of Dr. Keith Morison Garrett, which occurred at Muswellbrook, New South Wales, on January 14, 1931.

Births, Marriages and Deaths.

THE charge for inserting advertisements of Births, Marriages and Deaths is 5s., which sum should be forwarded in money orders or stamps with the notice, not later than the first post on Monday, in order to insure insertion in the current issue.

DEATH.

DOUGLAS.—On January 3, 1931, at 3, Morgan Street, Merewether, New South Wales, John Campbell Douglas, M.B. (Glasgow), 1869, aged 82 years, formerly of Greenock, Scotland.

Medical Appointments.

Dr. N. S. Gunning (B.M.A.) has been appointed Temporary Honorary Assistant Physician to the Infectious Diseases Block and also Temporary Honorary Clinical Assistant to the Ophthalmological Department of the Adelaide Hospital, South Australia.

* * *

Dr. O. W. Frewin (B.M.A.) has been appointed Temporary Honorary Clinical Assistant to the Ophthalmological Department of the Adelaide Hospital, South Australia.

* * *

Dr. W. A. J. Brady (B.M.A.) has been appointed Acting Superintendent of the Hospital for the Insane, Ararat, Victoria, pursuant to the provisions of the *Lunacy Act* 1928.

* * *

Dr. R. Perkins (B.M.A.) has been appointed Government Medical Officer at Quandialla, New South Wales.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

COMMONWEALTH DEPARTMENT OF HEALTH: Medical Officer.
STATE PUBLIC SERVICE, QUEENSLAND: Government Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company, Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members desiring to accept appointment in ANY COUNTRY HOSPITAL, are advised to submit a copy of their agreement to the Council before signing, in their own interests. Brisbane Associated Friendly Societies' Medical Institute. Mount Isa Hospital. Mount Isa Mines.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

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